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SUSTAINING ISLAND FISHING COMMUNITIES: POLICY AND MANAGEMENT IN PRACTICE IN MAINE AND NEWFOUNDLAND

By

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DEDICATION

This work is dedicated to the hardworking fish harvesters and lobstermen from Newfoundland and Maine; particularly those from Anchor Point, Change Islands, and Fogo Island, Chebeague Island, Monhegan, and Swan's Island.

ABSTRACT

This thesis examines the relationship between fisheries policy, fisheries management, and island community development in Maine and Newfoundland. Three research questions and themes guided this work: 1) what kind of relationship there is between island community development, fisheries policy, and fisheries management; 2) how communities responded to changes in the fishery; and 3) how each community's location influenced the ability of each community to respond to changes. Five island communities, Anchor Point and Fogo Island/Change Islands in Newfoundland, and Chebeague Island, Monhegan, and Swan's Island in Maine, were used as case studies and semi-structured interviews were conducted with people involved in fisheries and community development in each community in order to answer these questions.

Two particular aspects of fisheries policy and fisheries management were explored based upon observed trends from interviews: methods of limiting catch and licensing systems in each region. These themes connect to each other and relate to access to the resource. Each community had concerns about the ability of current and future harvesters and lobstermen to have economically viable access to the resource. In Newfoundland the relationship between island community development, fisheries policy, and fisheries management was perceived to be a top-down relationship; whereas in Maine it was perceived to be more integrated. Two of the most prevalent ways that communities directly responded to fisheries policy and fisheries management were either by changing management for their region or by creating new selling and processing capacity for their product. Typically the impacts felt in communities were from the cumulative nature of policy decisions. Respondents from each community felt that their location on an island was influential to their ability to respond to changes in the fisheries that they are

dependent upon. Island community development, fisheries management, and fisheries policy have a complex relationship; this thesis explores those nuances.

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INTRODUCTION

Island and coastal communities in Maine and Newfoundland have had a historical dependency on fisheries. In both locales, fisheries have had the ability to allow island communities to remain on their islands. Conversely, island communities have also had the ability to impact fisheries policy and management decisions and to determine how fisheries would influence the resiliency of their community. Using six island communities as case studies, this thesis explores the relationship between island community development, fisheries policy, and fisheries management. The communities are as follows: Anchor Point and Fogo Island and Change Islands (separate communities but linked for the purposes of this study) from Newfoundland, and Monhegan, Swan's Island, and Chebeague Island from Maine.

It must be noted from the outset of this thesis that traditionally in academia the term "fisher" would be used to describe the job described in this thesis as "lobsterman" or "fish harvester". This is not the term that people in each community use, including women who work in fisheries. This has been noted by Acheson (2003) as well:

> …I am using the terms "fisherman/men," "lobsterman/men," and "sternman/men" rather than "fisher(s)". Although the majority in the industry are men, there are some women who have their own boats and others who work as sternmen on the boats of others. Men and women alike prefer to be called fishermen, lobstermen, or "lobster catchers", not "fishers". The term "fisher" has a negative connotation. A fisher is a fierce brown animal in the weasel family that has eaten many pet cats in Maine and regularly kills dogs. (p. 237)

This thesis follows in this tradition, of using the terms that the people use themselves to describe their occupation. In Newfoundland case studies the term "fish harvester" is used, whereas in Maine it is either "lobsterman" or "fisherman" depending on the target species. This is done out of respect for the hard-working people in each of these communities. However, any other gender identifiers have been removed, using the neutral "respondent" or "person" instead.

Island Studies Literature and Perspective

Islands are unique. In island studies (nissology), we study islands on their own terms, as the unique places economically, geographically, socially, and culturally that we know they are. Historically, islands have been studied in terms of their relationship to the mainland. Péron (2004) writes of how distance from the mainland determined how much was known about an island by people on the mainland, focusing on "the effect of the maritime barrier that has for so long cut island dwellers off from the rest of the world" (328). While some may see it as a barrier, others view it as a workplace and a passageway to and from different regions. Historically, islands were not perceived as being as isolated as they are now, due to the prevalence of sea travel and the people who have made their living working on the water. This could be both merchants who traveled the seaboard or people who were fishing the waters that surrounded their island. While the importance of the ocean as a highway has disappeared in a mainland centric society, it remains for island and coastal communities that rely on the ocean for transportation and their economy, whether it be tourist or resource based. Baldacchino (2012) writes "our nagging (and continental?) hesitation to submit to the sea reduces our willingness and disposition to privilege maritimity, even in the case of island societies, where it presents

itself as most self-evident" (24). While the ocean may currently serve as or be seen as a barrier to the mainland, it also serves as a connection to surrounding islands and can give a shared experience to other islands. The experience of the water is positive for many island communities; it gives the ability to travel and make a living in the form of fisheries, tourism, or transportation. This gives way to the importance of the concept of aquapelagos. Hayward (2012) defines aquapelagos as:

> A social unit existing in a location in which the aquatic spaces between and around a group of islands are utilised and navigated in a manner that is fundamentally interconnected with and essential to the social group's habitation of land and their senses of identity and belonging (p. 5).

In terms of how island and coastal communities, particularly fishing communities, relate to the world around them, water is an essential component.

The disciplines of geography and island studies have many crossovers, and this is one of them. There are shared characteristics of islands that can be seen across regions, especially when comparing small communities. In geography, the concepts of place and space are integral to the field. Cresswell (1996) writes "But the effect of place is not simply a geographical matter. It always intersects with sociocultural expectations" (8). So while the physical location may be important, it is also related to what people have created while interacting with the physical location. The place is what humans have created; with this being said, all places are unique. With all places being unique, there are also shared qualities that can be similar across regions and times and places. This then links to island studies, with geographer Pete Hay weighing in on his thoughts of islands and places to bring the two concepts and fields together. Hay (2006) continues through

this frame of thought by saying "Because islands—*real* islands, real geographical entities—attract affection, loyalty, identification. And what do you get when you take a bounded geographical entity and add an investment of human attachment, loyalty and meaning? You get the phenomenon known as 'place'" (31). Islands are distinct places, with meaning of the community and island coming from the people who live there and interact with the surrounding space.

Co-management Themes

Co-management theory has contributed to the framework for this study and can help us to understand how a community voice might be included within a resource governance system. Carlsson (2003) defines collaborative or co-management: "the term 'collaborative management' (also referred to as co-management, participatory management, joint management, shared-management, multi-stakeholder management or round-table agreement) is used to describe a situation in which some or all of the relevant stakeholders in a protected area are involved in a substantial way in management activities (24)". Co-management is typically used in a common property resource, or a common pool resource. The terms common property resource and common pool resource have been defined by leading academics in co-management theory. Common property resources, as defined by Feeny, Berkes, McCay, and Acheson (1990), have two characteristics that are integral to the definition. The first is that it can be nearly impossible to have a single entity control common property resources (3). Secondly, they highlight the ability of every user of the resource to extract part of the resource, possibly leading to its degradation and exploitation (Feeny et al., 1990, 3).

Ostrom's "Governing the Commons" (1990), discussed the challenges of governing common pool resources, using case studies of past management systems to highlight her issues and solutions as the basis for her book. Ostrom (1990) defined a common pool resource as "a natural or man-made resource system that is sufficiently large as to make it costly (but not impossible) to exclude potential beneficiaries from obtaining benefits for use" (30). These definitions share a common theme; the access to a common source by either a large group of people or by everyone is hard to restrict. Ostrom highlights how difficult it can be to restrict access to a resource; this is mirrored in the definition laid out by Feeny, et al. Both these definitions show the scale of managing common pool resources: access is an issue for people involved in every part of the management process. In deciding who has access to a resource, Ostrom (1990) writes that one of the challenges of governing a common pool resource is defining both the boundaries of the resource and who may extract the resource (91). She continues to write that without this knowledge, it can be difficult to know what is being managed and by whom. This will be further discussed in this thesis.

In Hardin's "The Tragedy of the Commons" (1968), each person who is involved in using a common pool resource tends to think in terms of individual gain, which Hardin theorized could lead to the destruction of the resource (1244). While Hardin uses the example of a grazing meadow and farmers raising animals on said meadow, his ideas can be transferred to the effort put into extracting catch from a marine resource, as is done in fisheries. Hardin theorizes that resource extraction would continue unlimited and unchecked until complete destruction of the resource had occurred. In their response to "The Tragedy of the Commons", Feeny et al. reflect on how Hardin's work on resources

was viewed over twenty years after the initial publication and through a different lens. In their conclusion (1990), they state that:

> This leads us to amend Hardin's heuristic fable. The "tragedy" may start as in Hardin (1968). But after several years of declining yields, the herdsmen are likely to get together to seek ways to (1) control access to the pasture, and (2) agree upon a set of rules of conduct, perhaps including stinting, that effectively limits exploitation. (p. 12)

This would create a bottom-up management system rather than a top-down system. Co-management seeks to include people who are using the resource in the governance of their resource so that they feel some form of responsibility for what is being done with their resource. This creates a system that is cooperative rather than top or bottom heavy, with different scales of governance becoming involved. Carlsson and Berkes (2003) argue that "in short, co-management agreements serve the purpose of constituting cross-scale linkages among organizational groups that might not otherwise be connected" to demonstrate the importance of bringing together different levels of the governance system and those who are governed (12). There are many different systems of continuing this access to a resource. Co-management involves a bridge between a top down and bottom up system, creating a link that combines local knowledge with other actors involved in the governing system.

Study of the commons has not been restricted to localized issues of management. International work on studying the commons has become increasingly important in a globalizing economy and world. The International Association for the Study of Common Property (IASCP) is a research-oriented non-profit organization with global connections.

The IASCP (2012) is "devoted to understanding and improving institutions for the management of resources that are (or could be) held or used collectively by communities in developing or developed countries" (IASCP, "About"). This research has connected different forms of research about common property and co-management across the globe. They also maintain an online database about the commons which discusses multiple forms of common property use, including fisheries and agriculture, and different types of co-management strategies for different regions, such as rural and urban commons.

Marine anthropologist Evelyn Pinkerton has done a large amount of work on the role of fisheries co-management and communities. While much of her work focuses on the west coast of Canada, she highlights lessons that can be crucial for the east coast as well. In one of her research projects she and Leonard John, a representative of First Nations fisheries management, worked together to discuss the changing system of legitimacy in fisheries co-management. They detailed the process that local fisheries management went through to create a co-management system that worked for their specific fishery. Pinkerton and John (2008) highlighted the process as such:

> Four stages in the development of legitimacy are identified, each building on the previous stage: (1) a vision and local scientific and regulatory legitimacy are established, (2) the local authority gains political legitimacy, (3) the local authority gains regulatory capacity and moral legitimacy, (4) environmental values are revived. (p. 685)

The process described allowed the local fishing villages to have more control over their own fishery and input in the management process. Pinkerton and John (2008) concluded their study with the following statement, "finally, an important finding of this discussion

is that a local management system based on the mechanisms described above can be highly effective and certainly far more effective than a government system working alone" (690). This demonstrates how an effective local co-management system can work with development of a common property resource in partnership with the overarching government system that is in place.

Study of the commons and co-management theory were essential to this work because they relate to community access to resources. Each case study region chosen has had its own challenges with how access to the resource is determined; these challenges and the resulting responses will be explored in this thesis.

Fisheries Policy in Maine

The main fishery in Maine is lobster (*Homarus americanus)*. While there are other species targeted across the state, lobster is the most prevalent and the most important fishery for the case study communities. In Maine licensing is done at both a state and federal level; in order to fish in both state and federal waters, a lobsterman must hold both a state and federal permit. This is the same no matter what state an individual lives in. There are several different ways to enter the fishery, depending on the location of the community you live in. There are two methods that are common to the entire state of Maine (the student licensing system and the apprenticeship program) and one that is unique to several islands in Maine (the island limited lobster licence entry program). The student licence is available between the ages of eight and twenty two for full time students (State of Maine Statute Title 12, Chapter 619, 6421, 1977). This allows young people to begin learning the fishery. They must have a sponsor who is willing to record and "sign off" on their fishing hours and they may count time spent fishing on someone

else's boat (DMR "Maine Lobster Apprenticeship Program", 2012). The apprenticeship program allows people over the age of 18 to begin working towards a commercial licence. They must have an apprentice licence and log 1,000 fishing hours over 200 days fishing and a minimum time span of two years (DMR "Maine Lobster Apprenticeship Program", 2012). An apprentice spends time fishing with a sponsor who has held a licence for at least five years and records their activity and signs off on all of their activity (DMR "Maine Lobster Apprenticeship Program", 2012). Eventually they may transition to a full licence if they have completed the requisite number of hours for fishing and have completed the proper safety training. The apprenticeship program will involve a waiting list, depending on the zone they live in, whereas the student licensing does not.

Zone management was introduced in Maine's lobster fishery in the mid- 1990s. What is known as "zone management" in Maine is a co-management system in which both lobstermen and the government share responsibility for governing the resource. Rather than limiting the quantity of the catch, this system currently limits how lobstermen may enter the fishery and how much gear may be used. However, this outcome was not the original intent of the current zone management system. When zone management was first established in 1995, there were three main goals for each council. The first two of these goals limited the number of traps that a lobsterman could fish in a zone and the number of traps that could be fished on one line (known in the industry as pairs or trawls, depending on the number of traps on the line). The last goal determined the time of day when lobstermen could go fishing (Acheson, Stockwell, and Wilson 2000, 54).

The management later evolved to work towards the entry limits that currently exist for each zone. Each zone (there are seven across the state) is responsible for the entry and exit numbers of lobstermen (see Figure 1 for the zones). Each zone is governed by a lobster management policy council. In accordance with the legislation that created the zone councils, each council is made up of one lobsterman from each working harbour in the zone (State of Maine Statute Title 12, Chapter 619, 6447, 1995). Zone councils are responsible for is deciding how many lobstermen are allowed to set traps within that zone. This changes from zone to zone. For instance, in Zone B (home to Swan's Island), five lobstermen must leave the fishery before one lobsterman may enter the fishery from the waiting list. In neighboring Zone C (just over the border from Swan's Island) there is no limit on how many licences there are in the in the zone; any individual who has completed the apprenticeship program may enter the fishery immediately. This means there is no waiting list for Zone C.

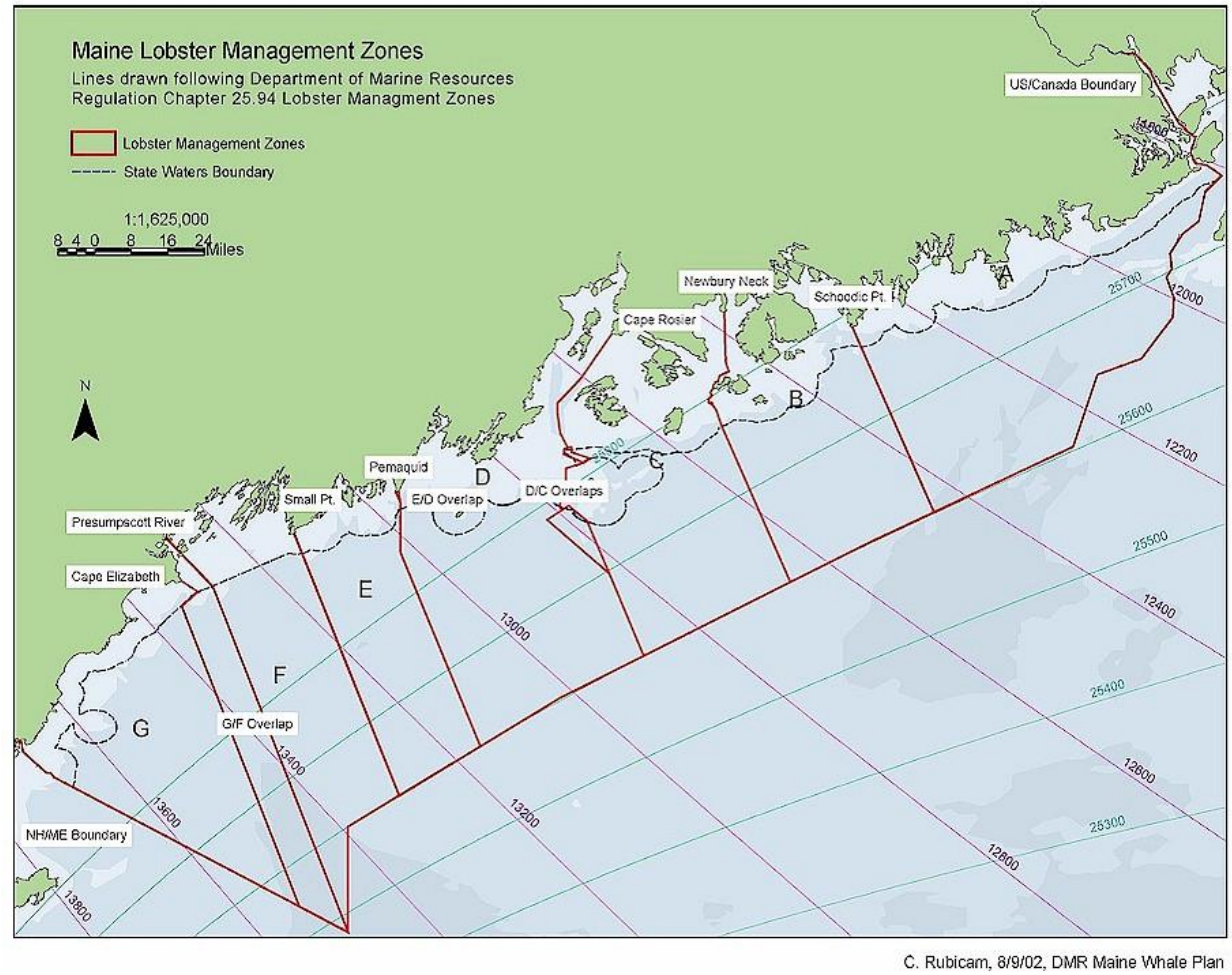

Figure 1: Maine Lobster Zone Management
Source: Maine DMR, "2002 Maine Lobster Zone Maps". (2006).

Another piece of the zone management puzzle has been trap limits and the location of fishing. Prior to the introduction of the zone management system, there had been no trap limit in the state of Maine, with the exception of community-implemented conservation zones surrounding Monhegan Island and Swan's Island, both of which are explained in detail below. After the zone management system was introduced, trap limits were introduced by zone, limiting how lobstermen could catch lobster. In 2000, when Acheson, Stockwell and Wilson published their review of the lobster co-management system in Maine, all the zones had some form of trap limit in place, but the limits varied

depending on the zone. They called attention to the differences of licence holders across the state, mentioning that what was considered a small number of traps in southern Maine (600) could be a large number in Down East Maine (Acheson et al. 2000, 56). Presently the maximum trap limit for nearly every zone in the state, with the aforementioned exceptions of Monhegan and Swan's Island and Zone E, is 800 traps. Zone E has a limit of 600 traps (McCarron and Tetreault 2012, 17).

The number of traps fished in each area prior to the zone management councils changed drastically depending on the part of Maine that they lived in prior to settling on the current limits. This was due in part to crowding in the waters, since there are more lobstermen in southern Maine waters than there are in the so-called Down East waters, which border Canadian territory and are comprised of the harbours in Zones A and B. The other part that comes into play is the territoriality of lobstermen in Maine. James Acheson has written extensively on this topic, writing a book on the social and cultural interactions between lobstermen from both one harbour and different harbours (*The Lobster Gangs of Maine,* 1988) and examining the difference between nucleated and perimeter-defended boundaries (2003, 29). Acheson's (2003) definition and research looked at the relations between lobstermen in perimeter-defended boundaries, those on islands, and says that they are typically closer and have to interact more frequently than their mainland counterparts (29). His theorizing on the competitive and co-operative nature of the lobster industry has formed the basis for much of the social research work that has been done in Maine on the lobster fishery. In order to fish in a community, one must not only complete the state regulations, but also be accepted by the community. Acheson (1988) found that if they are not accepted by the community and brought into

the “harbour gang”, they will not be able to fish there (48). Ways of limiting fishing can come in several ways; all of which are illegal and discouraged by the governing authorities. Usually there are small warnings, like knots in gear, known as “tying off” (this makes hauling traps a little bit harder), before it escalates to larger acts, such as cutting gear (removing the buoy from the line, thus losing the gear). If caught by the wardens, this type of behavior can lead to loss of a fishing licence in addition to fines. Acheson (1988) also talks about how each gang has its own territory which is defended by the members of the harbour gang (49). This type of territoriality demonstrates that on the water, like on land, place and location matters. Fishing territory and territoriality ties back to the concepts of space and place. The water is the location and space where the fishing happens, while the territory and resulting territoriality are imposed by people onto the space, mirroring how a place is created. This territoriality also meant that the creation of the zone management system created problems for harvesters who had traditionally fished in multiple parts of the Gulf of Maine simultaneously. The passage of “the “49%/51%” provision prohibited many fishermen from placing large amounts of traps in areas they had fished for a long time. This caused boundary problems which have not yet been completely solved” (Acheson et al. 2000, 59). The “49%/51%” rule restricts the number of traps lobstermen may set in zones that are not their home zone. Lobstermen are only allowed to place 49% of their traps in waters outside their home zone (Acheson, et al. 2000, 58).

The island limited entry licence method was passed in September 2009 and allows islands to create their own waiting list separate from the zone waiting list (DMR, “Maine Lobster Island Limited Entry Program”, 2011). The island limited-entry program was

designed to "maintain a number of licences appropriate for the needs of an island community and the local lobster resource" (State of Maine Statute Title 12, Chapter 619, 6449, 2009). This recognizes the importance of continued access to the lobster licences for Maine's islands.

Historical Importance of the Lobster Fishery in Maine

The lobster fishery in Maine has been well-documented in both popular and academic literature. As previously discussed, James Acheson has dedicated a large portion of his research over the years to the culture of lobstering communities in Maine and the management system as well. *The Lobster Gangs of Maine* (1988) focuses on the social relationships between lobstermen in Maine. This particular work notes how communities work in relation to each other as well. Acheson (1988) uses case study communities to discuss how communities defend their territory. Acheson's *Capturing the Commons: Devising Institutions to Manage the Maine Lobster Industry* (2003) focuses on the current management structure in Maine and how it could be improved in the future. One chapter in this book highlights island fishing territories as examples of how local co-management has worked in practice. Both of these works outline the development of innovative fishing management practices, particularly highlighting two of the case study communities (Monhegan and Swan's Island), as will be discussed further in this thesis.

In popular literature, Woodard published *The Lobster Coast: Rebels, Rusticators, and the Struggle for a Forgotten Frontier* (2004). While this book does use Monhegan as a setting, it also explores how Maine was settled in relation to fisheries and the rise of lobster fishing as the primary fishing industry in Maine. In particular Woodard (2004) makes the argument that a strong relationship between scientists, lobstermen, and the

management system has led to a "Triumph of the Commons", as the chapter is aptly called (235-278). This particular relationship juxtaposes Hardin's (1968) tragedy of the commons. By working directly with harvesters, there is a dialogue between those who conduct research and those who are impacted by it. Woodard (2004) writes:

> The scientists know there must be lots of big, breeding females out there somewhere—Steneck and Wilson have been working with lobstermen, submarines, and remotely operated vehicles, both inshore and offshore, to find and quantify them. But to answer why the brooders are still there, all one needs to do is go out to sea with a Maine lobsterman. (p. 253)

By working with lobstermen and using their knowledge, the scientists are able to conduct more accurate studies. Trevor Corson's *The Secret Life of Lobsters: How Fisherman and Scientists are Unravelling the Mysteries of Our Favorite Crustacean* (2005) focuses specifically on the relationship between lobstermen and scientists. Corson uses my hometown, Little Cranberry Island, as the lens for his book, where he writes about how lobstermen and scientists have begun working together to learn about lobsters, establishing trust between the two groups. The health of the lobster stocks is tied to the health of the communities.

Lastly, lobster scientist Bob Steneck has partnered with academics from various disciplines (biology, anthropology, natural resources management, etc.) to discuss the current dependency on the Maine lobster stocks across the state. Steneck et al. (2011) uses the term "gilded trap" to describe the economic dependence Maine's coast has on lobster and the danger of being dependent on one species. This type of dependence could be dangerous for communities that have access to very few other species.

Fisheries Policy in Newfoundland

In Newfoundland, and across the rest of Canada, formal authority in the fisheries management system lays almost exclusively at the federal level, with provincial jurisdiction limited primarily to licensing of fishing processing. Fisheries are managed with input and output measures. Morison (2004) defines input measures as ones that control "*who* is allowed to fish, *where* they are allowed to fish, *when* they are allowed to fish, and *how* they are allowed to fish", whereas output measures as ones that control "*what* they are allowed to catch" (411). Licences, usually specific to a particular species to be harvested, are the most common input measure in Newfoundland and Labrador. Different species-specific licences confer specific rights and responsibilities to licence holders. A species-specific licence can be put up for sale on the market by the owner and purchased by another individual. That being said, there are restrictions on who can buy a licence. In Atlantic Canada, for example, an owner-operator policy mandates that individual harvesters must own their licences and corporations may not own individual fishing licences, with the exception of corporations holding licences before this Fleet Separation Policy came into effect (DFO 2013a, 24).

Further, the ability to buy and sell a licence is tied to the professionalization that has been implemented in the province and across Canada. Professionalization means that the fish harvesters must now be registered and certified with certification based on levels of training regulated by the Professional Fish Harvester's Certification Board (PFHCB). With different registration status and certification levels comes the ability to buy licences and associated different fishing quotas. Both harvesters and enterprise are licenced separately. As of 1997 an individual may have one of three levels of certification

(Apprentice, Level I, and Level II) (PFHCB "FAQ", 2013). While the professionalization system was being introduced, previous harvesters were able to maintain their status by being "grandfathered" into the system. Professionalization has allowed fish harvesters to demonstrate a dependency on fisheries as a career.

Another important part of the professionalization system has been the introduction of a Fishing Masters designation. This designation requires more coursework than the Level II certification and allows for expanded opportunities in both Canada and in international waters. It gives the holder the ability to work on larger vessels that are not in the fishing industry and to travel further (PFHCB, "FAQ", 2013). Both of these abilities can have an impact on fishing communities and professional opportunities for their residents.

Since 1996 holders of vessel based, key species licences in the inshore sector (less than 65 feet) and their commercial fishing enterprises may be designated as Core or Non-Core enterprises (DFO 2013a; PFHCB "FAQ" 2013). A "Core Enterprise" is "a fishing unit composed of a fish harvester who is the head of the enterprise, registered vessel(s) and licences he holds, and which was designated as such by DFO in 1996" (DFO 2013a, 11). In order to buy a core enterprise today, a person must hold a Level II licence (PFHCB, "FAQ", 2013). This means they have fulfilled both the training and experience qualifications.

Quotas represent an output measure, whereas limits on seasons, areas, or gear control input into the fishery. Both of these systems are used in Newfoundland. Quotas are based upon scientific surveys that have been completed on the resource by DFO and determine how many fish can be removed from the water; gear restrictions, vessel

classes, and seasons restrict when and how that product may be removed from the water. Sinclair (1985) suggests that fisheries managers moved to seasonal enterprise quotas in 1984 as an alternative (or perhaps better put a supplement) to limited entry licensing.

While quotas are the main measure used to limit the catch of each species in many Newfoundland fisheries, including shrimp, crab, and cod, there are some types of gear that can be limited for different reasons. For the lobster fishery, the primary limits are output measures (similarly to how they are regulated in Maine) with no quota and limits on the types and amount of gear (i.e. number of traps) that may be used (DFO "Lobster", 2014). Different gear restrictions and requirements are used for conservation measures in the shrimp fishery, including different mesh sizes, sorting grates, and closed areas to fishing. Seasonal openings and closed areas to fishing further limit the fishery (DFO, "Sustainable Shrimp", 2013b). Seasonal openings do not always follow when it is possible to fish, as ice conditions can make unfavourable conditions for fishing and for the safety of the harvesters (Fisheries Regulations that Work for the Inshore Fishery: The Case of Change Islands, NL, 2012). The 3K snow crab fishery typically opens April 8th (and in one case April 29th) (DFO "Snow Crab Fishing Areas, 2013c) and runs through the middle of June. The 4R shrimp harvesters' season officially opens April 1st, with a voluntary delayed start to May 1st, and closing as late as the beginning of September, which will be examined further in this thesis.

The practice of combining enterprises was introduced in February 2008 by the Department of Fisheries and Oceans (DFO Enterprise Combining Implementation Guide, 2008). This was intended as a form of rationalization that would decrease the number of harvesters who were active in the fishery while maintaining the level of extraction that

was happening at that point. Under the Enterprise Combining Policy, harvesters could buy part or all of another harvesters' enterprise and combine it with their existing enterprise, with a limit of doubling their existing quota (DFO Enterprise Combining Implementation Guide 2008, 1). DFO went on to specify that: "any combining transaction must result in the removal of one IC (or Core) enterprise, a vessel registration and any duplicate species licences" (DFO Enterprise Combining Implementation Guide, 2008 1). In response to quota decreases in 2012, 3K snow crab licence holders were provided with two options: 1) to increase their individual quota through Enterprise Combining up to a maximum of three times their individual quota; and 2) a temporary Seasonal Quota Self-Adjustment option that allowed licence holders to reallocate all or portions of their snow crab quota to other licence holders in their fleet (DFO, 2012). The second option was known as a "quota sharing arrangement". In 2013, the quota sharing arrangement was discontinued but the 3:1 permanent enterprise combining was extended to all harvesters in the 2J and 3KL fleets for any key species, such as snow crab (*Chionoecetes opilio*), shrimp (*Pandalus borealis*), and cod (*Gadus morhea*) (DFO, 2013d) (see Figure 2 for Map of Newfoundland fishing zones).

Historical Importance of Fisheries in Newfoundland

Overall, Newfoundland has been the subject of many studies and resulting publications, both popular and academic, which investigate the impact of the fishery on the development of the province, particularly after the collapse of the cod fishery. Mark Kurlansky's *Cod* has examined the impact of the cod fishery on both the world and on the entire province of Newfoundland. Throughout the book, Kurlansky alludes to the

development of Newfoundland first as a seasonal fishing outpost and then as a year round residence with an economy based on fishing. In particular, he looks at Petty Harbour and the Sentinel Fishery's impacts on harvesters who had been cod harvesters prior to the moratorium (Kurlansky 1997, 4). Consistent with the elements of co-management described above, the Sentinel Fishery was designed to have inshore fish harvesters and scientists from the Department of Fisheries and Oceans collaborate to track changes in the local cod stocks (FFAW "Sentinel Program", 2014a). Harvesters are given locations to set fixed gear and to fish with mobile gear by the scientists who design the survey and are trained in sampling protocols prior to starting the Sentinel Fishery (SLGO "Sentinel Fisheries", n.d.).

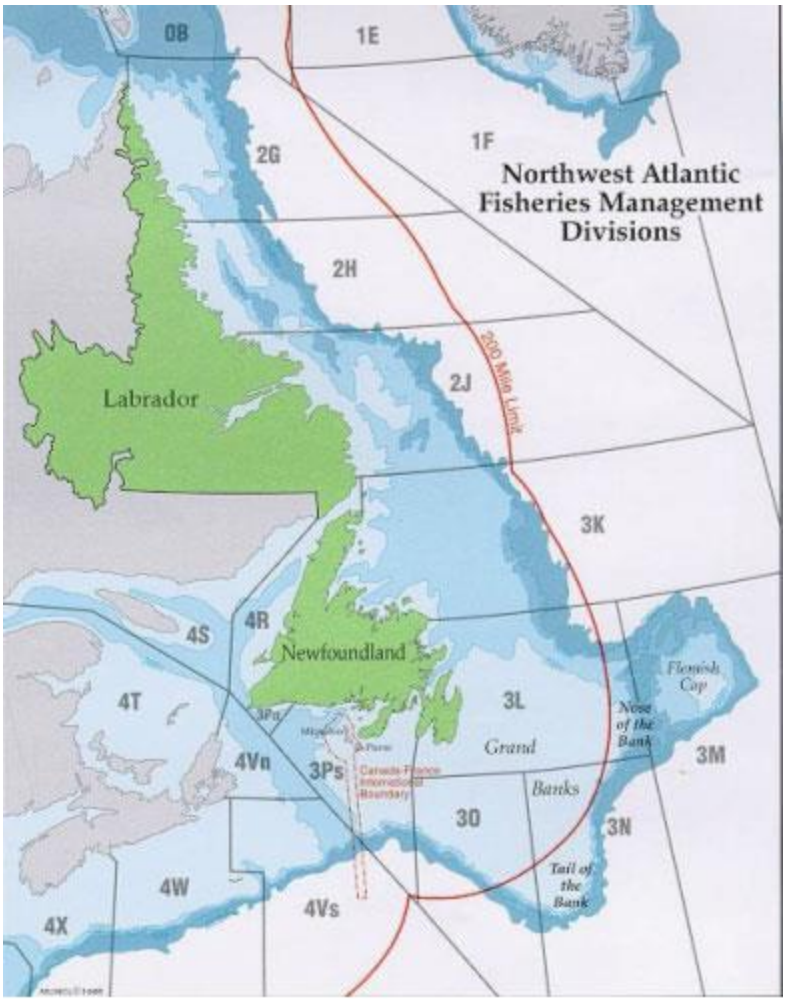

Figure 2: Northwest Atlantic Fishing Organization (NAFO) fishing zones
Source: Newfoundland and Labrador Heritage, "Cold Oceans." (2000).

In another important work, Dean Bavington's *Managed Annihilation: An Unnatural History of the Newfoundland Cod Collapse* looked at the role of natural resource management in the collapse of the cod fishery. Bavington (2010) makes the argument that management has shifted in recent years from the management and monitoring of fish to managing people's activities on the ocean and, in turn, their ability to catch fish (71-90). That same section summarizes the changes that can be seen in the fishery from the beginning of the fishery, in small uncovered boats, to the larger seagoing vessels that are seen today. The closing lines of this chapter say that "…through this

process, conditions have been created that favour a return to managing codfish, this time in laboratories and on farms where domesticated cod can be controlled from egg to plate and fish can finally be predictably harvested instead of hunted in a capricious sea (Bavington 2010, 90)." This echoes the sentiments of a change in the fishery, from a small-scale hunting system, to the larger scale industrial system seen in Peter Sinclair's work.

Summary and Conclusion

This section focused upon how literature connects to the research that was conducted. The literature reviewed focused on three key themes: island studies and geography, co-management themes, and the relevant fisheries policy climate in each region. By examining this framework, it sets the stage for the research itself. The research questions for this research explore the following: 1) what kind of relationship there is between island community development, fisheries policy, and fisheries management; 2) how communities responded to changes in the fishery; and 3) how each community's location influenced the ability of each community to respond to changes.

The island studies and geographical themes were the framing themes for this research. How the islands relate to each other and the continental mainland is important for how this research is viewed. The idea of water being not only a barrier between the mainland and the island communities, but also a place to work and a way to connect, is important for the island communities chosen as case studies, particularly since the focus of this research was on fisheries. Geography lends the idea of "place", of human interactions making a piece of land or water what it is for humans. This ties in to the research how respondents may have felt about a policy or management decision and what

it meant for their home. Humans and the environment interact with each other at a close level in resources dependent communities, if this idea is taken one step further; it is possible to see how the relationship between fishermen, fish harvesters, and their resource is taken. Water is not a barrier for the case study communities; it is a source of both economic and leisure activities.

Co-management themes are important for the communities chosen. Access to a resource, managed in terms of licensing and limits on catch, is what enables people to make a living, thus allowing them to continue to live on the island. Without access to the resource, there would be very few, if any, economic options available in the case study communities. However, this access has primarily been at the federal or state level, as evidenced in the policies described. Co-management, at its root, seeks to involve all stakeholders in the management of their resource. This creates a climate where it is possible for community members to work directly in the governance structures that control their resource. By giving their input, they would be able to voice their concerns at the beginning of the process for making a policy or management decision. In some ways, this thesis is a comparison between a region without official co-management (Newfoundland) and one that has already involved co-management (Maine). The policies outlined demonstrate what policies are in play already and how they work.

This thesis examines the relationship between fisheries policy and management systems and island community development in Maine and Newfoundland. Now that the theory behind the research has been explained, the next step is to determine how they have worked in practice. Chapter two lays out how the work was approached and what methods were used. Chapters three and four explain in detail the results from the

research. Finally, chapter five compares and contrasts the results and discusses what this means in relation to the theoretical framework set out in this chapter.

METHODOLOGY

This section outlines the specifics relating to each community and why each community was chosen. It goes on to describe how data was collected, organized, and analyzed.

Methodology Justification and Case Study Approach

This study used a multi-case study approach, including two study regions (Maine and Newfoundland) and five study communities (or local areas in the combined case of Fogo Island and Change Islands), two in Newfoundland and three in Maine. This approach was selected to best understand what community members felt about and how they had responded to policy decisions. Zucker (2009) writes that the case study method can be seen as "emphasizing the participant's perspective as central to the process" (Conclusion paragraph one). This research focused on obtaining the participants' perspectives, placing community voices at the centre. Yin (2014) writes about the necessity of defining a unit of analysis prior to starting research in order to focus the guiding questions (29). The study was designed to have each community function as the primary unit of analysis. There are similarities within each larger region (Maine and Newfoundland), including shared federal and provincial/state policies and regulations, but each community has had different responses to said policies and regulations, but each community has had different responses to said policies and regulations. In addition to the state regulations in Maine, there are the regional regulations that come with the zone management. For example, due to each community being in a different zone, there are differences in how each one interacts with the licence waiting list. Yin also writes about how using multi-case studies as opposed to a single case-study can make the study stronger as it can demonstrate points of reinforcement or comparison in the results (60-62). Baxter and Jack (2008)

maintain that in order to examine the similarities and differences between each case across different regions, the multi-case study approach is the most appropriate (550). While the regulations and policy decisions within a province or state may be the same, each community may have a different response; by including different case study communities within the same regions, these differences and similarities could be examined. This allows a comparison of different scales and how they can work together. The interview questions that were asked and discussed focused on what local people knew and felt of policies and management decisions; this was the primary voice that was of concern.

Rationale for Communities Chosen

Communities were selected for this study based upon several factors. The first, jurisdiction, was chosen because both Maine and Newfoundland have long histories of a dependence on small-scale fisheries for small coastal communities, particularly islands. These are well-documented in academia and popular culture. The second important factor was past history and activity, particularly in policy discussions, whether fisheries related or community governance related. Each community was selected because it had been historically active in policy and management discussions and had changed something either for their community or for surrounding communities. As an example, each community had an initial draw for this research. Anchor Point's was a voluntary delayed start to the shrimp season and Fogo Island and Change Islands draw was the presence of the Co-operative. Monhegan and Swan's Island were both selected due to their respective conservation zones, and Chebeague was selected due to the adoption of the Island Limited Lobster Licence Entry program in the spring of 2012. After the initial draw, there

were many more reasons that compelled a visit to each community; they are outlined in the community selections below. Lastly, each community was selected based upon past personal experience with different island communities. Maine communities were specifically chosen where there were no prior personal visits to the community. As a resident of the town of Cranberry Isles, comprised of Little Cranberry Island (my home) and Great Cranberry Island and I had visited two other islands with year round populations (Long Island (Frenchboro) and Isle au Haut) on previous occasions. When selecting case study communities, I chose communities that I had not visited previously. Due to the networking of Maine islands, I did happen to know or have met at least one or two people on each island prior to visiting there. I drew on these connections in Maine to identify possible participants and to arrange lodging in each community. While it would have been possible to select my own community, I felt that it was more important for me to go elsewhere and learn from them, rather than having my hometown continue to be the lens through which I view the world. In Newfoundland, communities were selected based upon the prior research that had been completed in each community. There were no previous visits with any of the communities chosen in Newfoundland either, but there was contact made with a few key people, such as people involved in the municipal government, regional development, and fisheries. These contacts helped me connect with potential respondents to meet with once I entered each community. These contacts were introduced to me through my committee and research team for the Harris Centre-funded project that comprises the Newfoundland half of this thesis. Table 1 compares the population, target species, the relative distance from regional service centres, and the island size of the island that each community is located on.

Table 1: Comparison of Case Study Communities

Community	Population	Target Species	Distance from service centres (km)	Size of island (km²)
Anchor Point	326	Shrimp	112 (St. Anthony)	111,390 (NL)
Fogo Island	1,976	Crab and Shrimp	82 (Gander)	284.8
Change Islands	276	Crab and Shrimp	82 (Gander)	27.1
Monhegan	65	Lobster	28 (Rockland)	2.5
Chebeague Island	400	Lobster	-- (Portland)	7.7
Swan's Island	350	Lobster	27 (Bar Harbor)	32.4

Source (Island Sizes): Newfoundland and Labrador "Geography", n.d.; Island Institute "Chebeague Island 2014a; Island Institute "Swan's Island", 2014b; "A Visitor's Guide to Monhegan", 2014; Shorefast Foundation, "Fogo Island and Change Islands", 2014a.

Maine Communities

Each community in Maine is located on an un-bridged island that is only accessible by boat. The primary fishery for each community is lobster, as it is across the state of Maine. Swan's Island is located just to the southwest of Mount Desert Island. The ferry to Swan's Island leaves from Bass Harbour, on the southwestern side of Mount Desert. Bass Harbour is 27 kilometers from Bar Harbour. The ferry takes cars and passengers and is shared with Long Island (Frenchboro). They belong to Zone B, but are just on the border of neighboring Zone C. Monhegan is located south of Port Clyde, where their ferry departs from, carrying only passengers. Port Clyde is 28 kilometers from Rockland. They are within Zone D, but lobster in their own Zone D-MI (Monhegan Island). Chebeague Island is located in the waters of Casco Bay, and has two ferries operating year round, one directly to Portland, and one to Cousin's Island. The daily

ferries are passenger only, and the Cousin's Island ferry connects to a community-owned parking lot on the mainland by a community-operated bus service. Both Swan's Island and Monhegan have been featured prominently in work by James Acheson (1998, 2003). See Figure 3 below for a comparison of where each community is in relation to the others. For a map of the location of other Maine communities referred to in this thesis, please refer to Appendix D.

Given their unique adaptation of the management systems, both Swan's Island and Monhegan have had their conservation zones used in trap density studies or studies that require a certain amount of closure for the season (interviews, Maine). Monhegan in particular has been used for various studies that look at the relationship between trap limits and the impact on the species. Since it has had a defined perimeter, a trap limit, and a closed season, it has had some tests done in the past that could not have been done elsewhere, relating to trap densities and other issues. In particular, James Acheson looked at the policy and management implications from using this system on both Monhegan and Swan's Island, as is described in detail in the following community profiles. Acheson (2003) says that both communities have had great success from this type of co-management largely because they are so small they are able to talk over issues amongst themselves (58-61, 66-68). Swan's Island, similarly, has been surveyed biologically because of their similar conservation zone (interviews, Maine). While each zone evolved differently, there are two large similarities between the zones: each zone has state protected fishing grounds and a limit on the number of traps that may be used is different from inside and outside of the conservation zone. The two main differences between the two islands conservation zones are that Monhegan's zone has an open and closing date

for their fishing season and a limited number of licences that may be fished inside the zone, while Swan's Island's zone has an open season with no closures and anyone who is willing to fish the number of traps for their conservation zone may fish there.

Figure 3: Maine Case Study Communities
Source: Google Maps. (2014a). Additional community names provided by author.

Swan's Island has a population of around 350 year round residents, with a much larger population during the summer months (Town of Swan's Island, Maine, 2014). Additionally, Swan's Island has had a specially defined conservation zone since 1984 (Acheson 2003, 67). This specially defined zone is enforced by the state. This zone has a restricted trap limit. In December 2012 the trap limit there was 475 traps, as opposed to the 800 trap limit in the rest of the state. Lobstermen from other harbours could fish in this zone as well, but only if they followed the same trap limit as lobstermen from Swan's Island. Since this time the trap limit has been raised to 550 traps (State of Maine Statute, Title 12, Chapter 619, Section 6482, 2013). Swan's Island is home to three different buyers, the Swan's Island Fishermen's Co-operative, Kent's Wharf, and Underwater

Taxi. There are also "smack boats" (the local term for boats that come to the island to directly buy lobster from island lobstermen) that visit the island occasionally. See Figure 4, below, of Swan's Island.

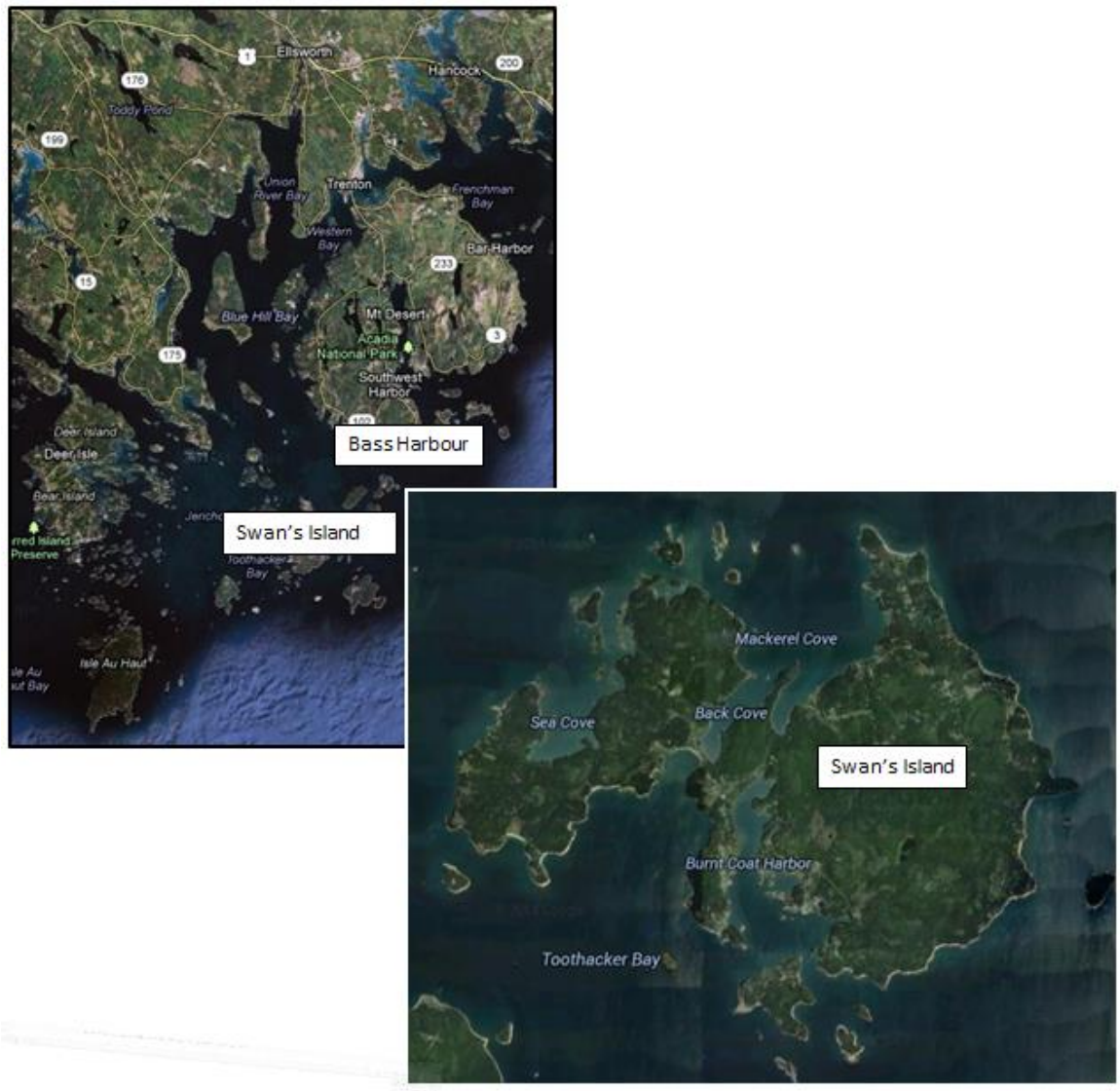

Figure 4: Map of Swan's Island
Source: Google Maps. (2014b, 2014c.) Additional community names provided by author.

Monhegan has a specially defined conservation zone, in addition to strict conservation measures in place that limit trap numbers and the fishing season, the only one like it in the state (Acheson 2003, 61). There was an informal apprenticing program on Monhegan prior to the state adapting an apprenticeship program for licensing and

Monhegan had the first state recognized fishing zone, as well as the only closed fishing season for lobster in the state. Monhegan has a year round population of approximately 65 residents (A Visitor's Guide to Monhegan, 2014); although the population is anecdotally lower in the middle of the winter. There are no buyers for lobster located on Monhegan; each person commutes to the mainland to sell their catch and to obtain bait, fuel, and other supplies. Monhegan is located the farthest from the mainland for this study, at 12 miles from the mainland. See Figure 5, below, of Monhegan.

Figure 5: Monhegan Island
Source: Google Maps. (2014d).

Chebeague Island, the island in Maine that is the furthest south, has a population of approximately 400 year round residents (Island Institute, Island Indicators, 2012). Lobstermen from Chebeague have traditionally sold their catch on the mainland, with the

biggest buyers being in nearby Portland. There are a few smack boats that still go to Chebeague to buy lobsters. There is also a buyer, Dropping Springs LLC (Limited Liability Corporation), which is based on the mainland but is almost entirely lobstermen from Chebeague Island (sending a smack out to Chebeague to sell bait and buy lobsters). This sense of entrepreneurship led to the creation of the Calendar Islands Maine Lobster in 2009, a company devoted to creating gourmet lobster products for home consumption. In 2007, Chebeague Island seceded from Cumberland, a mainland town that they had previously been a part of, in order to protect their island community school (Chebeague Island Community Association, n.d.). In June 2012 they entered into a limited entry lobster licensing program and became one of three island towns to use the limited entry system (Waterman 2012). See Figure 6, below, of Chebeague Island.

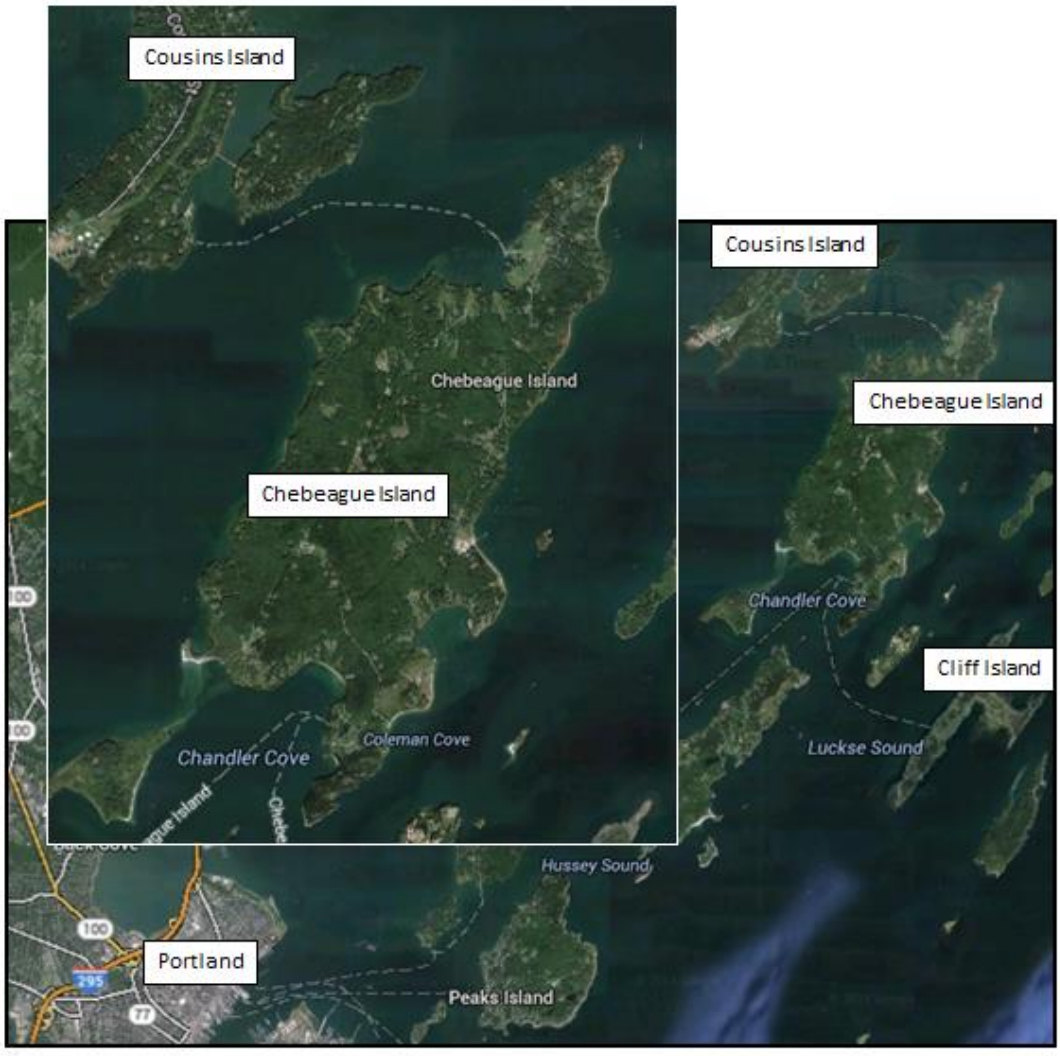

Figure 6: Chebeague Island
Source: Google Maps. (2014e; 2014f). Additional community names provided by author.

Maine Community Organizations

Island Institute

The Island Institute has worked with Maine's unbridged island communities and remote coastal communities for the past 30 years ("About Us", 2014c). Their focus has been upon ways to help island communities maintain their foothold and continue to develop economic opportunities. Support from them has come in various ways: academic

scholarships, networking opportunities, business training programs for island residents, conferences, a newspaper (The Working Waterfront) and journal (The Island Journal), and a continued presence at state and federal meetings. Their most widely known program on the islands is the Island Fellows program, which places people in the community in partnership with island organizations for a period of one to two years. The projects the Island Fellows work on varies from island to island, but in the past have included environmental sampling, assistance with developing comprehensive plans, partnerships with libraries and schools, and development of agricultural and fisheries programs. The Island Institute has a presence on each of the island communities visited in Maine. They have provided support for the Outer Islands Teaching and Learning Collaborative, of which Monhegan is an active member. This Teaching and Learning Collaborative encourages team teaching between islands, using tele-communication technology to bring the classrooms together.

Maine Sea Coast Mission

The Maine Sea Coast Mission has had a presence for the islands of mid-coast and Downeast Maine since 1905, providing over 100 years of support ("FAQs", 2014). They provide "spiritual, health, and youth development programs" for the communities they work in partnership with ("FAQs", 2014). For the study communities involved, they have worked with Monhegan and Swan's Island. They help provide church services to the island, but also bring fellowship and services. Their boat, the Sunbeam, has a traveling tele-med clinic to provide health services during their visits to the outer islands in the winter. The Sunbeam is also used to transport people from one island to another for

different events and fundraisers, thus helping to continue connections between the islands.

Newfoundland Communities

Anchor Point is located close to the top of the Northern Peninsula. Just south of Anchor Point is St. Barbe, which serves as the home port for the ferry to and from Labrador. Anchor Point is 111 kilometers south from St. Anthony, a small regional centre, and 305 kilometers north from Deer Lake and the TransCanada Highway. The population of Anchor Point is 326, an increase of 5.5% from the 2006 census (Statistics Canada, 2011). The primary fishery for Anchor Point is the shrimp fishery. There are other species harvested along that coast as well, such as lobster, crab, halibut, and scallops, but the most important fishery from a financial standpoint is now shrimp. The Northwest Atlantic Fisheries Organization (NAFO) fishing region they belong to is the 4R region, along the western coast of Newfoundland (see Figure 2). While Anchor Point differs from the other case study communities in that it is a community located on a much larger provincial island, rather than a small island as the other communities are, the community shares many of the same problems of access and distance from service centres that the other communities have. They were chosen primarily due to their participation in the collective delayed start for the shrimp season among the 4R harvesters. There is a shrimp processing plant located in Anchor Point. See Figure 7, below, for a comparison of Anchor Point's location compared to Fogo Island and Change Islands. See Figure 8 for a map of

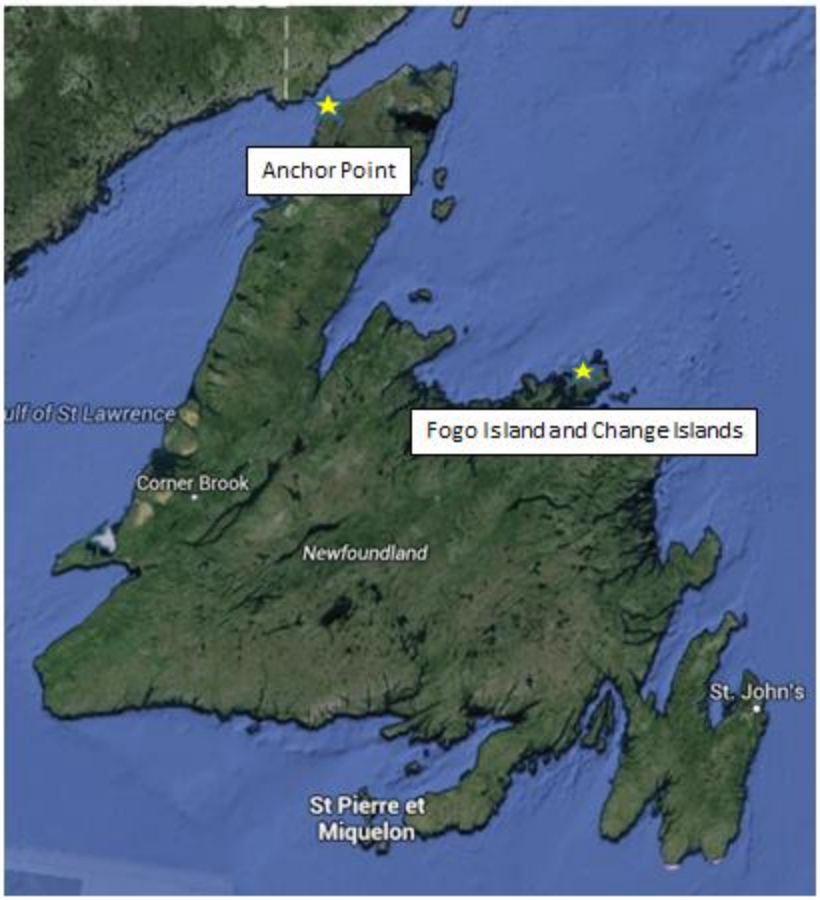

Figure 7: Map of Newfoundland Communities
Source: Google Maps. (2014g). Additional community names provided by author.

Anchor Point. For of a map of the location of other Newfoundland communities referred to in this thesis, please refer to Appendix E.

Fogo Island and Change Islands are 112 kilometers from Gander, the closest major center. The population of Fogo Island is 1,976, a decrease of 11.2% from the 2006 census (Statistics Canada, 2011). The population of Change Islands is 257, a decrease of 14.3% from the 2006 census (Statistics Canada, 2011). Fogo Island and Change Islands share a ferry service, which departs from Farewell. They are located off of the northeastern coast of Newfoundland in the Notre Dame Bay. The primary fisheries for Fogo Island and Change Islands are snow crab and shrimp. Likewise, there are other species that are targeted, such as cod, lobster, and halibut, but the most financially

important fisheries today are crab and shrimp. The islands belong to the 3K NAFO region, along the northeastern coast of Newfoundland. Fisheries are, again, the largest economic player for each community. Each community depends heavily on fishing and fishing-related activities for income. There are three plants on Fogo Island and one plant on Change Islands. Combined, they process cod, capelin, herring, mackerel, crab, shrimp, turbot, and sea cucumber (Winter 2012). See Figure 9, below, of Fogo Island and Change Islands.

The Northern Peninsula

Peter Sinclair has focused a great deal of his work on the Northern Peninsula, although with lessons for the rest of the province as well. Sinclair, in partnership with Lawrence Felt, for example, brought together a collection of authors in a volume dedicated to community development and life on the Northern Peninsula (*Living on the Edge*, 1999). Of particular importance to this research is an essay by Craig Palmer, which examines how fisheries policies have impacted tensions between harvesters as well as the importance of how and where fish is processed of the fleets that supply these processing plants. Palmer (1995) highlights "The most frequent defense against abolition of the local dragger fleet is that without them the fish plants would close and the region's economy collapse" (63). This dependency is seen in communities across the province that are dependent on fisheries and the fish plants that exist in those communities.

This dependence on fish plants is something that is seen in communities across the province where fish plants are located. Typically there are strong fisheries also located in communities where fish plants are present. Following the 1992 moratorium on Northern cod, employment in fisheries processing fell from an estimated 30,000 full time

equivalent (FTE) workers in 1990 to 9,214 individuals in in 2012 (Fisheries and Oceans, Canada 1993, 6; Department of Fisheries and Aquaculture 2012a). The number of licenced primary processing plants decreased over this period from 241 in 1991 (Fisheries and Oceans, Canada 1993), to 87 in 2012 (Department of Fisheries and Aquaculture 2012b). Of these 87 remaining plants, 15 were located on the Northern Peninsula including one in Anchor Point and others in nearby New Ferolle and Black Duck Cove (Department of Finance, 2012).

Peter Sinclair has conducted extensive research on the changing technologies of fisheries on the Northern Peninsula, focusing on the fishing fleet in Port aux Choix as his case study in his book "From Traps to Draggers" (1985). In this book he examines the process by which the Port aux Choix fishing fleet transitioned from the historical fishing method of traps to the more modern trawling and dragging technologies. This research also focuses on how small-scale production had been able to remain in place during a time period where industrial efforts were becoming larger. Sinclair found that there were small groups of individuals that were able to maintain their small scale production within the larger system, in part because "the uncertain, seasonal and small-scale nature of inshore fishing" leaves them free from competition, he argues, from large scale capitalists who are not attracted to such an enterprise (1985, 144). Yet he acknowledges that small-scale harvesters are left to compete for access to fishing ground and to markets with larger, near-shore draggers.

The Great Northern Peninsula Fisheries Task Force was established in the fall of 2004 to address regional concerns over the challenges facing the fishery in the region, which the report points out was once known as the "forgotten coast" (Great Northern

Peninsula Fisheries Task Force, Red Ochre Regional Board Inc. and Nordic Economic Development Corporation, 2006). The Task Force concluded that one of the most crucial things that could happen for the region, and the province as a whole, was to come together and work regionally as a united force rather than as individual harvesters or small groups (Great Northern Peninsula Fisheries Task Force, Red Ochre Regional Board Inc. and Nordic Economic Development Corporation, 2006).

Starting in 2010 a series of research projects were launched examining the importance of fisheries in the region as well as challenges faced and opportunities for change by researchers from Memorial University of Newfoundland in partnership with the Rural Secretariat. The research demonstrated that small-scale harvesters felt that there was a need for more research into how community allocations work and for discussions about establishing co-operatives (Rural Secretariat, 2012). This research from the Rural Secretariat and Memorial University informed two of the themes explored in this research, co-operatives and alternate forms of community involvement in fishing and fisheries management. The large boat sector highlighted the challenges that came from the processing side of the industry (Rural Secretariat, 2012).

In the Northern Peninsula region, much of the previous research reviewed was based on either the entire Northern Peninsula or specifically on the St. Anthony area. While there was some that overlapped with Anchor Point and the surrounding communities, St. Anthony area (just to the north of Anchor Point) has had research conducted on the community quota developed for the St. Anthony Basin Resources, Inc. (SABRI). SABRI has a 3,000 metric ton quota of shrimp and utilizes revenues generating through that quota to pursue economic development for the region (SABRI Mission,

2007). SABRI has allowed for expanded initiatives in the community, such as expanded economic development, oral history projects, and scholarships for community members for that region (SABRI, 2007). In addition to expanding tourism opportunities, they also have worked to expand the small boat fishery and to do research on mussel farming for the region. Foley, Mather, and Neis (2013) found that SABRI was a response to federal fisheries policies and has been an example of how communities can manage their own resource in a way that includes "job creation, fisheries diversification and community development" (21).

Community selection also entailed examining community involvement in the government and what they had accomplished. Anchor Point Town Council has been active in lobbying the Department of Fisheries and Oceans about the voluntary late start that 4R harvesters agreed to and the harvesters concern about the future of the resource (Town of Anchor Point, 2012). They continue to have a municipal presence in the fisheries committee of Municipalities Newfoundland and Labrador and in the Integrated Coastal Zone Management Council..

Figure 8: Map of Anchor Point
Source: Google Maps. (2014h; 2014i). Additional community names provided by author.

Fogo Island and Change Islands

The Fogo Island and Change Islands region has been focused upon due to the presence of the fisheries Co-operative and the resettlement initiative in the 1960's. Historical research has focused on the Co-operative and the community. Bonnie McCay has examined the role of fish harvester's wives in the Co-operative's fish plants on Fogo Island demonstrating how women have moved from a "behind the scenes" role in processing of fish (working cutting fish at the end of the fishing day) to a more "official" capacity working in fish plants (1988). Another paper by McCay focuses on the role of

quotas and transferable quota systems in the community, discussing how access to the fishery dictated the amount of work available to the community on fishing boats and in fish plants (1999). Carter reviews not only the role of co-operatives in Newfoundland, but specifically the role of the Fogo Island Co-operative Society. Started in 1967, the Co-operative has supported the community despite economic and political challenges that have occurred (Carter 1988, 27).

Derek Smith, Maureen Woodrow, and Kelly Vodden completed the study that guided the research for this region the most. This research looked at fisherpeople's knowledge and policy in Change Islands. In particular they examined how governance measures have impacted the community of Change Islands and the role of local place-based knowledge in the creation of future fisheries policies (Smith, Vodden, Woodrow, Khan, & Fürst, 2013). Stemming from this research was a series of policy briefs that specifically highlighted four key issues from the research: 1) the rationalization of the fishery, 2) seafood prices and market access, 3) fisheries regulations that had worked, and 4) the viability of small coastal and island communities. This study (Local Knowledge Change Islands) stated that while small island communities were historically and culturally important in the province, very little value had been placed upon them in terms of provincial development (Viability of Newfoundland and Labrador Coastal and Small Island Communities, Change Islands, 2012). These issues are further expanded upon in the results of this study.

The comparison of the Northern Peninsula and Fogo Island is not unique to this study. Foley, Mather, and Neis (2013) compared the two, as well as communities on the southern coast of Labrador, in a Harris Centre funded project. While they did not focus

upon Anchor Point specifically, they did examine the region SABRI has worked in, the tip of the Northern Peninsula. They were examining the role of shrimp allocations to specific communities and how allocations have impacted them. They found community quotas to be an innovative way to use small allocations of quota and that communities were able to come together to use the quota to support not only the harvesters, but also the extended community (Foley, Mather, and Neis, 2013). One of the key findings from their research was that allocating quotas to "*community-based organizations* can play a significant role in the social and economic sustainability if this province's coastal communities (Foley, Mather, and Neis, 2013, 36). This demonstrates how the relationship between fisheries and communities is not only strong, but can be beneficial if communities are able to administer their own quotas.

Figure 9: Map of Fogo Island and Change Islands
Source: Google Maps. (2014j). Additional community names provided by author.

Newfoundland Community Organizations

Shorefast Foundation

The Shorefast Foundation has been working on Fogo Island since 2003 ("About Us", 2014b). They are a social enterprise that has worked to develop new economic opportunities on the island that can continue in the future. Among these opportunities have been geotourism, the creation of an artists-in-residence program, and a micro-lending initiative ("About Us", 2014). All of these opportunities are related to the fishery and the ability of the community to continue on in the future. There are four studios located around Fogo Island; each artist is given the use of one studio during their residence. Geotourism is dependent on the sense of place in an area. A large part of the draw for tourism on Fogo Island is the fisheries; this has been cited as something that determines whether or not the geotourism will work in the future. All of these initiatives are designed to widen the economic base of the community. Shorefast has also been involved in the development of a cod trap used in the waters around the island. In 2009, the first traps were used (DFA, "Baited Cod Trap Fishery—Fogo Island", 2010). This was intended to provide traceable local fresh cod for Nicole's Café in Joe Batt's Arm and for Bacalao Nouvelle Newfoundland Cuisine in St. John's, with the Fogo Island Co-op acting as an intermediary (DFA, "Baited Cod Trap Fishery—Fogo Island", 2010). The harvesters who were involved in this experiment were paid $1.25 per pound for their trapped fish, versus the 46-56 cents per pound that harvesters were typically paid for gillnetted fish (Safer 2010, 1).

Regional Economic Development Boards

Regional Economic Development Boards (RED Boards) were created in 1995 in response to a call for more economic community development opportunities from the Task Force on Community Economic Development (Vodden and Hall, 2013, 8). The focus of each board was to be on regional development opportunities. In 2004 this shifted to a focus on municipalities and community development (Vodden and Hall, 2013, 9). There are twenty boards across Newfoundland. The Nordic Regional Economic Development Board encompasses part of the Northern Peninsula, including Anchor Point. The Kittiwake Regional Economic Development Board encompasses the region where Fogo Island and Change Islands are located. The Boards have worked on cooperative projects with the communities to explore fisheries related activities and economic development possibilities.

Rural Secretariat

The Rural Secretariat is a part of the provincial government and they work to "advance the sustainability of rural Newfoundland and Labrador communities and regions" (Rural Secretariat, 2014a). There are representatives from the Rural Secretariat across Newfoundland Labrador and they work together with communities to create strong communities. They work on "economic, social, cultural and environmental aspects of regional development" (Rural Secretariat "About", 2014b). This integrated approach allows them to encompass both fisheries and community development related issues from communities and to incorporate environmental concerns, such as sustainability.

Integrated Coastal Zone Management

The Integrated Coastal Zone Management initiative is a partnership between the two RED Boards on the Northern Peninsula (RED Ochre Regional Board, Inc. and Nordic Economic Development Corporation). They work to "foster the integration of economic, social and environmental objectives in a framework of protection and conservation while enduring sustainable development of coastal resources" (ICZM, 2012). Their steering committee is made up of representatives from community development corporations, municipal governments, local harvesters, provincial governments, and the federal government. They have been working together since 2010 on joint initiatives and in 2012 were the host for a Fisheries Forum on the Northern Peninsula.

Fish, Food and Allied Workers

Fish, Food and Allied Workers is the union for fish harvesters and fish plant workers in Newfoundland and Labrador. They work on issues pertaining to the inshore fleet (FFAW "Inshore Sector", 2014b) and the offshore fleet and processing sector (FFAW "Industrial/Retail/Offshore Sector", 2014c). These councils are both under the umbrella of the larger FFAW structure. In addition to this, they also work with industry members and the government to set the price for fish products across the province and maintain a list of prices for different species (FFAW "Fish Prices", 2014d). In order to initially become involved in the Sentinel Fishery, discussed above, harvesters had to be involved in the FFAW.

Data Collection

Identification of Participants

Participants were approached in a variety of ways. Prior to starting site visited possible participants had already been identified. This was done through conversations with community members, people who had previously done research in those regions, or had knowledge of the community. Other possible participants were identified through previous research, books, and newspaper articles about each one of the case study communities. This was a way to identify people who had already spoken to researchers or the press, who then might be willing to be interviewed and participate in this research. For the purposes of this study, involvement in community development was determined by official involvement in community governance or on community development boards. In reality, each person interviewed was involved in community development due to the nature of the communities chosen. There is overlap between those who were involved in the fishing sector and in community development, which will lead to mismatches between the numbers shown in the tables below. The respondents were of a range of ages to demonstrate the long lasting impacts of fisheries on communities and the lifelong dedication to fishing, with the youngest participants in their mid-30's and the oldest in their early 80's. The majority of the respondents were in their early 50's-mid 60's. Fishing is still a male dominated industry, so the majority of respondents were male. However, every opportunity possible to interview female fish harvesters and female lobstermen was taken to ensure the greatest diversity possible. In Newfoundland, the fishing season had either just ended or the harvesters were in between fishing seasons at

the time of site visits. In Maine, the lobstering season was going in each community visited at the time of site visits. Due to the weather-influenced nature of fisheries, the best opportunity to interview each participant, particularly in Maine, was to contact them once arriving in the community and once the weather forecast was known. Upon arrival in each community, each individual who had previously been identified was contacted. Once the interview had been conducted, each person was asked who else they thought should be interviewed ("snowball sampling"), leading to new respondents in each community.

There were forty-nine people interviewed throughout the course of this research. There were sixteen people interviewed from Anchor Point; eight were fish harvesters, four were involved in the processing sector, and seven were involved in community development. Ten of the interviews were recorded. There were ten people interviewed from Fogo Island and Change Islands; seven were fish harvesters (two retired), two were involved in processing, and two were involved in community development. All of the interviews from Fogo Island and Change Islands were recorded. There was one government representative interviewed who was involved in fisheries management interviewed in St. John's and one government representative who was interviewed by phone after leaving Newfoundland; these two people are not included on Table 2 below. There were five people interviewed from Monhegan; four were lobstermen, one was a groundfisherman, one had started pursuit of other species in the off season and two were involved in community development. Four of the interviews were recorded. There were six people interviewed from Chebeague Island; four were lobstermen and two were involved in community development. Five of the interviews were recorded. There were

seven people interviewed from Swan's Island; six were lobstermen, one was a crew member, one was involved in community development, and two were buyers. Eight of the interviews were recorded. See Table 2 and Table 3, below, for the demographics of each community.

Table 2: Demographics of Newfoundland Communities

	Fogo Island/Change Islands	Anchor Point
Number of respondents	10	16
Recorded	10	10
Fish Harvester	7	8
Community Development	2	7
Processing/Buyer	2	4
Male	7	9
Female	3	7

Table 3: Demographics of Maine Communities

	Monhegan	Chebeague Island	Swan's Island
Number of Respondents	5	6	10
Recorded	4	5	8
Lobsterman	4	4	6
Community Development	5	3	2
Processing/Buyer	0	0	2
Male	3	4	7
Female	2	2	3

Interview Location

Examination of the questions posed in this thesis was evaluated by interviews conducted in the communities chosen to be used as case studies. The interviews took place in a variety of locations depending on the comfort level of the individual. Each person was asked where they wanted to meet and a mutually agreed upon location that was the most convenient for the participant was agreed upon. In some of the communities visited I was able to ensure a private meeting room, such as at the community town office

or community centre. In most cases, the easiest way to interview someone was to go to their home or workplace and conduct the interview there.

Format of Meeting

Participants were asked to answer a series of questions conducted while visiting their communities. The majority of the interviews were done individually, but there were a few interviews with a small group, such as a couple or with whoever was present, when it was requested. The questions asked pertained to their perceptions of the impacts of policy on their community and how their community has reacted to these changes. The time of each interview was varied. Interviews ranged in length due to time constraints and how much information the respondent had to share; the majority of interviews were between thirty and forty minutes in length. The interview process was as follows: introduction of researcher to the participant, explaining the thesis research and the objectives of the research, obtained a signed permission from them to interview them, begin the interview (thus discussing the questions), and finally a brief debriefing following the interview and my thanks to them for speaking with me (Debriefing Script can be seen in Appendix C).

Nature of Interview Questions

The interview process used was a semi-structured interview. There were three sets of questions: one that was common to all study areas, one for each state/province, and one for each individual community. In the common questions, the interview began by asking the interviewee about their job and why they had become involved in it. It was from these questions that the terms “fish harvester” became used in Newfoundland and

the term “lobsterman” became used in Maine. This is reflected throughout this work. The interview continued to discuss what they felt was necessary for the fishery and community to continue forward and what they felt had had the largest impacts on their community. Within their answers, it was possible to ask them to draw out specific issues, such as elaborating on why they thought a policy had the most impact and how it could be seen in the community. After this, the discussion moved to the regional questions. In Newfoundland these focused on the impacts of the cod moratoria of 1992 and regional co-operation, whereas in Maine they focused on the price fluctuations of the 2012 lobstering season, the new island limited entry licensing system, and the impacts of fisheries on the identity of their community. Lastly, the individual community responses were discussed. In Anchor Point, the focus was on the voluntary late start of the 4R harvesters and the possibility of a co-operative for the region. For Fogo Island and Change Islands, the discussion was geared towards the impacts of the Fogo Island Co-operative and the cod pot and cod trap experiments. On Monhegan, the focus was on the conservation zone and the apprenticeship program on Monhegan. On Swan’s Island the focus was on the conservation zone. On Chebeague the focus was on the limited lobster licence entry program and how the community had changed after seceding from the mainland town of Cumberland. The full list of interview questions is included in Appendix A.

Data Collection Organization

Thirty-eight of the forty-eight interviews were recorded with voice recorder and were transcribed after returning from the field portion of the research. The only interviews that

were not recorded were at the request of the participant. The research questions used allowed community members perspectives on how policy and management had impacted their community to come to the forefront of the research. During the interviews a notebook was kept where I was able to record observations during my interviews. This allowed reflection on things that the interviewee may have been particularly proud of or issues that they had highlighted as ones that were important. Interviews that were not recorded were used to highlight agreement on issues and how people felt about the community, to demonstrate the community feeling.

Transcription and Coding

After transcribing the interviews, interviews were coded using N-Vivo, a qualitative data analysis program which helped to group themes from the interviews together. Initially, codes were made up of keywords I identified from interviews. As there were two major themes that came up in each area (licensing and limits on catch), these themes subsequently guided how codes were created. While I was transcribing interviews, it became apparent that there were additional keywords within each theme that would be useful to note for the coding process. These became more codes to add to the initial list. Once the full coding list was created, interviews were coded initially by general theme, and then secondarily by keywords or sub-themes within that section.

Data Interpretations

Interpreting the data happened after the coding process was completed. Due to the use of the N-Vivo software, each code was then able to be grouped together to show where

themes overlapped, to create subsets of data that showed where themes came together and what interviewees said about them. I scanned these subsets to pull out perspectives on what each person said in each interview. This process confirmed the anticipated themes and introduced new themes and common threads observed from the research. This information was summarized in notes that gathered all of the interviews into a condensed form. By doing this, they were able to be quickly scanned for highlights and transformed into writing. After this, there was the ability to draw a comparison from what was seen in each community and to separate it into the initial categories that were created at the outset of the research. The two most two important themes for each region were limits on catch and, more specifically, licensing.

Confidentiality and Anonymity

There are few risks involved with this type of research. Fish harvesters and lobstermen have been asked questions by a wide variety of people in the media and in other academic venues, especially ones from the communities chosen as case study communities. Prior to entering the field, we determined that potential risks could be social in the case study communities. In past experience in fishing communities, it is generally easy to tell whether or not someone is in favour of a policy; fish harvesters and lobstermen are often not quiet by nature if there is something they disagree with, especially within their community. Additionally, there are people in each community who are more vocal about fishing policy than others are; these people are the ones who were initially contacted due to their outspoken nature. One lobsterman said that they were less likely to speak to me about issues than they were to speak to their neighbors. The social risk would be to

people who were not as vocal. The estimated probability of these risks was and remains low. The communities that selected have been used as study sites in the past multiple times for different projects. In order to ensure confidentiality, interviews were conducted in private and did not disclose what people discussed with anyone else, thereby ensuring that their identities remained separate from the content of the interviews. Based on the size of the case study communities, anonymity of participants was not possible; they were able to be identified within the communities. However, what their interviews contained will be held in confidence by me as the researcher, both now and through the end of the five year period I am required to hold the information through as per the Research Ethics Board approval obtained at both the University of Prince Edward Island and Memorial University of Newfoundland. Their involvement in my research should not have had any negative impacts on them as community members. I discussed any potential impacts with them prior beginning the interviews. I also disclosed the purpose of my study to them when I contacted them. I found minimal risks for the communities as whole. They could face pressure from political bodies based on their stance on different issues, but this is pressure that they would have regardless of the results of my interviews. There were no benefits directly to individual participants from this research. That being said, individuals may benefit from learning about how other communities have coped with challenges and may be able to incorporate those coping mechanisms into their communities. Further, it is my hope that this study will inform improved fisheries policy processes in the future, which will in turn be of benefit to fishing communities.

In order to be involved in this research, all interviewees were asked to sign a consent form. The information letter and consent form can be seen in Appendix B. The

consent process was discussed with them when they were contacted them for an interview. They were then able to make their decision to participate in the research with knowledge of what was expected from them during the research and how they were able to withdraw from the research. They had to consent to being interviewed in order to participate (and to being recorded). However, part of the consent form stated that they were allowed to withdraw from the study at any time, whether it was part way through the interview or after the interview was completed. Their participation was, and remains, voluntary. If there were questions that they did not want to answer, they were allowed to not answer them. Additionally, during the consent and debriefing process my contact information was provided so that they could contact the interviewer in the future if they wanted to retract all or part of their interview. After the interviews were completed, a conversation with the participant took place to see if they had any concerns that came from the interview questions. In all of the interviews, no one ever identified concerns or had any questions beyond interest about the research and what other communities were to be visited. The debriefing script can be seen in Appendix C. Participants were asked if they wanted a copy of their transcript after the research was completed; for those who indicated that they did, a copy was made available**.**

NEWFOUNDLAND RESULTS

This section outlines the results from the Newfoundland half of the research. It focuses on methods of limiting catch, licensing systems, regional cooperation, and specific resiliency strategies in each region and community. While each of these are presented separately, each one is intertwined with each other theme.

Methods of Limiting Catch

Methods of limiting catch were often discussed with respondents in each community. Quotas have limited the amount of product that can be removed from the ocean by all parties, thus conserving the resource in the long-term and limiting how much could be removed by all parties. Quotas frequently fluctuate from year to year. Harvesters said that it was hard to predict what they would need for gear and to plan for the fishing season from year to year due to the fluctuations in quotas; with steadier quotas they would be able to balance their needs and expenses with their predicted income.

There were two types of input control mentioned in interviews. One was limitations on the types of gear that could be used and the other was the opening and closing dates of fishing seasons. With gear there were restrictions in the type of trap they were allowed to use and the size mesh allowed on traps (especially within the cod fishery) and restrictions on methods such as the "buddy-up" method. In the "buddy-up" system, harvesters would combine fishing effort onto one boat, fishing with multiple licence holders, typically two licences at a time. This allowed them to capitalize on the effort expended versus the money that they could make from fishing and to have a safer

working environment. Experiments with cod pots and discussions about the use of a communal cod trap are outlined further below.

Seasons for fishing were of particular interest to small-scale harvesters. Whereas shrimp and crab harvesters have a longer season, respectively running from early April through the middle of June and the beginning of May through the beginning of September, other fisheries do not. In particular, in the summer of 2012 the halibut fishery had a 24 hour fishing period. Other fisheries have the same problem, that they are only open for a short period of time. This is challenging where the weather may not always be conducive to fishing. One harvester explained:

> Same thing for gearing up for the nets for turbot, we fished at one time but to gear up now to go at that, well to have those fisheries is cut so short…24 hours for two days for catching turbot or three days, 24 for fishing halibut, oh…I say nine days. They're almost gone for a nine day fishery, how can you stay at it.

Harvesters have recognized the difficulty in remaining in a fishery with a short season. For some harvesters, as mentioned above, it was financially not worth the effort to change over gear for the short season. Other harvesters depended on those fisheries, despite the reduced season, due to the licences that they owned. It was particularly important for those who did not own one of the bigger species licences, such as shrimp or crab.

Licencing

Respondents discussed the connections between licencing and quotas. Some people have a licence for a species but do not fish for it because the quota is too low, as discussed above. This was seen with the cod fishery in both Anchor Point and Fogo Island/Change

Islands. In both regions there were harvesters interviewed that had cod licences at the time of interviews. In order to fish for cod they would have needed to switch over all of their gear in the middle of their most lucrative fishery, shrimp and crab, respectively. From another perspective, other harvesters want access to specific fisheries but are unable to get a licence for it due to the cost of the licence or lack of training.

Licencing combined with professionalization has had some positive impacts according to those remaining in the industry because it has kept people from fishing who were fishing in addition to other activities, such as part-time jobs, and therefore impacting full-time harvesters. One harvester said:

> Well, positive was when they began to lease you the licences, because I mean years ago, everybody could go fishing and you had what we call moonlighters. They had a part time job, sometime in the day and then just before dark when you would go out, the fishermen would go out on the grounds and do some hand lining and things. Instead of the amount of fishermen that was out there, you would have double or triple and then you would get people messing with your gear and all that sort of things, so that was a positive thing. There's positive things about licences and quotas, that's for sure.

People who got into fishing and kept their licence did so because they wanted to fish as an occupation and livelihood. Harvesters explained that they have stayed in fishing because that was what they wanted to do for a living. See Table 4, below, for how licences were obtained for each harvester. Each number represents an explicit explanation of how a harvester bought their licence.

Table 4: How Licences Were Obtained in Newfoundland

	Fogo Island/Change Islands	Anchor Point
Transferred	1	0
Bought Pre-Moratorium	5	4
Bought Post-Moratorium	0	1

Finally, licencing for plants was also raised as an issue. Plants require a licence to be able to process each specific species. Respondents reported that there is someone trying to get a multispecies plant operational in New Ferolle (56 kilometers south of Anchor Point), but the applicant has not yet received a licence for it yet. Further, if a plant does not use a licence to process a specific species for more than three years, they lose that licence. This was mentioned by two people in different areas with respect to a sea cucumber processing licence. One person in the processing sector explained the political and contentious nature of licencing decisions:

> There was a licence for sea cucumber up there [the Northern Peninsula] that…they didn't use it for three years, [and the] policy is, if you haven't used [the licence for processing] in two years, you lose it…this person who had the plant now in Cook's Harbour, and the Minister…decides well, the only one really processing sea cucumbers is Fogo, they got a monopoly on it, why should they have a monopoly? Ok, I'm gonna give it back, I'm gonna see what I can do to help OCI out. This is the big corporate company now, on the south coast, so you give the licence back to [the owner], [who] sells it to OCI, transfers it from OCI from Cook's Harbour to St. Lawrence, right next to the fishery where we've been fishing for 12 years. That gives them a distinct advantage.

The Change Islands Fisheries Improvement Committee owns and holds the processing licence for the Change Islands fish plant, but the plant and licence are leased to and operated by the Fogo Island Co-operative. One respondent noted that there is a licence for a co-operative on the Northern Peninsula as well, but it is not currently in operation.

Rationalization

Rationalization was seen as a particularly challenging aspect of fisheries policy by most respondents on Fogo Island and Change Islands, reflecting the work done by Smith, Vodden, and Woodrow. The cod moratorium of 1992 was a defining moment in the history of Newfoundland's fishing and community development. This has been tied to current policy and management decisions, especially those that are related to licencing and output/input measures, and has resulted in a major and ongoing period of rationalization within the industry. The immediate impacts of the series of cod moratoria were felt directly in the communities, while the long ranging impacts are still being felt.

One of the most immediate impacts of the cod moratorium was that people left their communities, particularly after post-moratorium relief programs ended. With no fishery, residents had no other economic activities to keep them busy and to generate income. People left for other parts of the country to find work. One respondent said that the moratorium "destroyed the fishery". Losing fishing as an occupation was particularly hard on those who were older. There were training programs available but the respondent explained that they would have had a hard time getting a new job due to their age and lack of training in other fields. Interviewees from both communities also pointed to the ongoing loss of and consolidation of fish plants in Newfoundland. Without a fish plant,

they suggested that communities have tended to lose their fish harvesters and plant workers as people leave to find jobs.

Older harvesters have retired from fishing due to the rationalization and the programs that have been offered to buy licences back, sometimes to a financial disadvantage. One former harvester explained: "The government paid us so much, $30,000, it wasn't even uh, wasn't even uh, the worth of what I had in traps and everything else I had, I didn't break square on it. It was no big lot of help." Licences were bought based on their value at that time, which meant that harvesters felt that they were not given adequate compensation for the amount of money they had invested in the fishery and the amount of gear that they had purchased and maintained. Harvesters who sold their licences back during rationalization also lost the ability to sell their gear, which can be expensive to obtain and maintain. Because fewer people were fishing, they were not able to sell the gear to increase the amount they received from the government, which was described as lower than the amount of money they would have previously received for selling the species licence and gear. Nevertheless, two harvesters from Fogo Island said that they had sold their licence using a licence buy-back program known as The Atlantic Groundfish Strategy (TAGS). In a fishery where there was a licence but no quota, they did not feel that it was economically viable to continue fishing those species.

Quota Sharing and Enterprise Combination Policy

The Enterprise Combination Policy was spoken about in Anchor Point as a policy that has made it possible for harvesters to continue fishing despite reductions in quota. The Enterprise Combination Policy makes it possible for a harvester to own the quota

from two licences for their enterprise. A single "complete" licence has a quota share for the Gulf fishing region and a quota share for the northern fishing region. When a harvester has both, they say they have a "complete" licence. The Enterprise Combination Policy was, in part, a rationalization strategy (discussed further below); however, for most that mentioned it in Anchor Point, it was seen as a way to strengthen their community and continue fishing. One harvester said:

> Well what, what it did was it kept a lot of our younger people around because uh, like myself, my crew now makes double the money they would with a one enterprise, exactly double the money they would with one enterprise. They extended the fishing season twice as long, because you're out there catching the fish with one enterprise, then its 2 enterprises…there's less jobs but there's more benefits, that's my point of view of it, eh, and you're making the fish plant more or less at full capacity rather than running at partial capacity.

To this person the Enterprise Combination Policy had been positive for the people who were able to stay in the fishery and the plants. This change kept more people working in the plants than before.

Not everyone was comfortable with the job losses associated with the policy, however. Despite the smaller number of licences, when there are already low quotas in the fishery it means that it can be challenging to keep enough quota attached to one boat to make fishing economically viable for those who remain actively in the fishery. One solution would be to share quota bought through the Enterprise Combination Policy:

> … well right now I'm ¾, I can stand another 300,000 pounds of shrimp, see. … then I'd be full…. I could've been there, I could've, but I shared that with 2

> people, the first one I shared, the last one with, well there were 4 of us, and I was the one who could have had it all to myself if I wanted it…You gotta keep the quota in the area for the plants, see. I could've had 2 full quotas, wouldn't have had to share….that's the way I believe. It's too bad we don't have enough to have it [anyway] but that's the only way we're going to stay alive.

This fish harvester chose to share the access to quota so that other people would also be able to stay in the fishery, rather than taking the entire quota for themselves. By doing this, they allowed other people to continue to fish in the area and remain in the community and for the plants to remain open.

Like this Anchor Point harvester, in previous research conducted on Change Islands, the Enterprise Combination Policy was seen as something that was generally not positive for the people there or the community as a whole. In the "Rationalization" brief provided by the Change Islands research, the harvesters viewed rationalization as a tool to remove fisheries dependent communities from the fishery and described the Enterprise Combination Policy as a rationalization tool (Rationalization of the Fishing, 2012). This policy was a way to remove fish harvesters from the water and reduce effort in the fishery.

A favourable aspect of the quota system that was mentioned by a DFO representative was referred to as a "Quota Sharing Agreement" in the 3K region. In response to quota cuts in 2012, snow crab licence holders in the 3K region were able to either increase their quota by three times their individual quotas (an increase from the two times allowed elsewhere since the introduction of Enterprise Combining in 2008) or to

temporarily reallocate their quota to other licence holders in their fleet. The federal representative explained:

> What that allows is people to basically transfer their quotas on a temporary basis to other harvesters, and with no commitments, so for a while someone else could catch their quotas and whatever arrangement they come up with between themselves and that harvester who decided to let his quota go to someone else could go work, go work somewhere else, so it gave them some options.

This allowed harvesters to have a little more control over when they fished and to Co-operate with each other in sharing access to the available quota.

Recreational Fishing

Harvesters from both study regions, Anchor Point and Fogo Island/Change Islands, identified the food fishery (also known as the recreational fishery) as taking away from the already low quotas that fish harvesters already have to follow for the cod fishery. They saw it as damaging to the local communities. The general public is able to have access to cod through the food fishery and is able to legally catch up to five fish per day during the specific weeks that the recreational cod fishery was open. The recreational fishery is typically open in July and October. Respondents stated that there were more fish that left the water from the food fishery than the allotted five per person, particularly arguing "There's more quota being taken out through [the recreational fishery] than what they see. And I'd be out on the bet with [you], to every codfish that they know is caught, that's ten more that they don't know about". They said that this has damaged their ability to fish and to sell their catch locally, as there is oversaturation from people illegally

selling cod caught in the recreational fishery. One harvester suggested that the structure of the recreational fishery is different than it would have been if they had followed the traditional seasonality of cod fishing: "We wouldn't have gone out in July…I would rather go out today and get one fish for a meal, be allowed to do it and that's it. If I'm caught with more than one, charge me…" This type of fishery has changed the access to the fish; the recreational fishery is open during specific weeks, typically in July and October, where people are able to catch their allotted five fish per person per day. This person advocated changing the system so that instead of a week-long season with daily catch limits, it would be one fish per day, year round. Clear tensions exist between the commercial fishing sector and other community interests who advocate for the right to fish for food (one fish per day arguably has negative implications for individuals in terms of the cost and time required to fish) and suggest that access to fish for purchase locally can be limited in an export-oriented industry (Lowitt, 2013).

Marketing, Selling Catch, and Processing

The selling, processing, and marketing of Newfoundland seafood were themes raised by interview respondents. In the Anchor Point region it was noted that there needs to be more done with their product. The shrimp that is processed there is done in large bags of shrimp (at least five pounds), with little to no specific branding on it. One harvester said "And right, do more with your product. Don't make me catch more, because the quotas can't stand it, but let me do more with what we have to catch." By improving their marketing, this harvester felt that it would be beneficial as it would create a push for more branding and more value-added products.

Processing is an important part of the puzzle. Harvesters sell their catch directly to a processor. In the case of fish harvesters who are members of the Fogo Island Co-op, their processing plant is run by the Co-op. The processors make sure that the plant workers are able to get enough work in so that they may collect Employment Insurance (EI) during the winter when the plant is shut down.

There were differences of opinion within the respondents on the requirement that harvesters sell their catch to a licenced processor for minimum processing. Several people noted that they want there to be more processing completed to develop a value-added product, while others suggested that it would be more lucrative for harvesters if they were able to market their fish or do some minimal processing:

> If I was able to freeze it at sea I would have a way greater value because you're eliminating the middle man, but the problem with that is if you have, then your plants don't have no work, right. I'll give you an example, this year we were at turbot, and at one time turbot would last all year and this year it was open 12 days this year, so, we brought in 40,000 pounds of turbot, for a dollar sixty a pound. So that's uh, like $65,000 worth of turbot. If I were to freeze it at sea and do minimal processing on it, if I had my boat geared up, which I can do, that sixty thousand dollars for the fish I brought in and landed with, if I landed it frozen it would probably be worth I dunno what the market price is, but I'm assuming its up over 3 dollars a pound, so that would be double for sure, I would say, I would say with that fish we'd be at $150,000, versus $65,000.

One respondent highlighted that there are too many people involved with the chain from harvester to consumer, diluting the profits that the harvesters get from their product.

Lastly, harvesters sell to certain plants, but they sell based upon which plant has been working with them historically, and has lent them money, and not necessarily where their home port is located. For instance, out of seven fish harvesters interviewed in Anchor Point, there were three different locations that their shrimp were sold in: Black Duck Cove, Anchor Point, and St. Anthony; one multi-species harvester sold their catch to various companies, but consistently sold their lobster to one particular processor. One shrimp harvester also targeted crab when not fishing for shrimp. They sold the crab in Labrador. All of the respondents interviewed on Fogo Island and Change Islands were members of the Fogo Island Co-operative and sold their catch there.

Regional Cooperation

Regional cooperation has a long history on Fogo Island and has been a means of responding to difficult conditions. One respondent discussed when Fogo Islanders pulled together in the 1960s to create a co-operative to repair the roads. At that point in time, each community was fairly isolated from each other. Secondly, they discussed the formation of the Fogo Island Co-operative (discussed further later in this chapter). They have continued to operate their Co-operative and to work together. Recently they pulled together the eleven communities on the island to regionalize the island and create one municipality (Town of Fogo Island). Since 2012, The Fogo Island Co-operative has also operated the fish plant on Change Islands. The Change Islands Fisheries Improvement Committee owns the plant and the licence to process, but the Fogo Island Co-operative leases the licence and operates the plant. This co-operation has enabled the two communities to benefit from each other. The Co-op obtains access to local processing

capabilities and the community of Change Islands has an operator for their plant, thus employing community members.

In Anchor Point the region has pulled together on two notable occasions that were discussed. The first was when their fish processing plant shut down. They were afraid of the impacts of the plant's loss and pulled together to find a solution to ensure that the plant would continue to operate and provide income for the community. The second was the delayed start for the 4R shrimp harvesters. Both examples are covered more extensively in the sections on the Northern Peninsula Co-operative efforts and the voluntary late start effort below.

Multiple respondents also used the example of the St. Anthony Basin Resources Inc. (SABRI) as an example of how a community quota can impact a community. SABRI was created when 3,000 metric tons of shrimp were allocated to communities at the tip of the northern peninsula of Newfoundland. Since that allocation, it has grown and spread to other economic activities, including aquaculture, trail building, and scholarships for the community. The management of a community allocation takes regional co-operation as well as creating opportunities for economic development.

Fogo Island Co-operative

The Fogo Island Co-operative, interview respondents explained, works because it is on an island and members feel a duty and loyalty towards their island community. People there felt that they had no other option because they were on an island, with associated difficulties related to access to other markets and distance from the mainland. One retired harvester said about the Co-operative and the island that:

> I think it wouldn't have worked outside of Fogo Island, no, they tried before, to tell the truth, but other communities tried it around Newfoundland and it never worked. And the only reason it worked here was because, I'll be honest about it, we were on an island, our boundary is confined, we're on an island, and all the fish that are main employers…they were all fish merchants, they all closed shop because they wouldn't be tried and the cod fishery wasn't viable, they all closed shop, and our backs were up against the wall. If we wanted to stay, we had to do something. But if it would have happened anywhere else in Newfoundland, if they tried to [do] it [in] phases and it hasn't worked yet.

This demonstrates how the community pulled together and that being on an island was imperative to the creation of the Co-operative and the continuation of it. This harvester felt that if they had been on the mainland, the Co-operative would not have continued on due to loyalty to the company.

One harvester stated that they felt that the Co-operative was the reason was the community still existed in the manner it did. In response to whether or not the Co-operative had impacted the community, they suggested:

> Oh definitely…if there was a private individual here and times got tough, a private business man, you've got one goal and that goal is to make money. And you're not gonna care if you're gonna be suffering financially or otherwise and you move on, but the Co-op has been here there has been some very trying times, times its been close to bankruptcy, and uh, I mean when I was there, the last year I was president, we were at that death's door and it was very difficult to be a volunteer and to uh you know, to do something with your free time but that's the

> kind of things you do, at that time I felt that I had a commitment to the island and I saw my term out for 3 years and after that I moved on but the Co-op has kept Fogo Island going because at least it kept it going to the level we are now, if the Co-op wasn't here I'm sure there'd still be a community on Fogo Island but how prosperous would we be?

This type of commitment to the island and community is what created the Fogo Island Co-operative and, according to this harvester, what has kept the Co-operative in operation and the community functioning. Another retired harvester felt the same way about the role of the Co-operative: "The only thing that kept this island going was the Co-op, you know, was most of the most everyone now that's not fishing…is into the processing part of it now. They're working in the [fish] plants…there seems to be more work around now than when I was growing up." With the Co-operative in operation, there has been more work available, with three fish plants operating on Fogo Island that are owned by the Co-operative and one operated on Change Islands.

Northern Peninsula Co-operative

Efforts to form a co-operative have been long-running in the Anchor Point region. Previous efforts began when the fish plant ceased to operate. At that point people started pulling together to work on how to find a solution:

> When the fish plant had closed previously the community had come together and they were looking at exploring the option of setting up the fish plant as a co-operative…but before they had become formally established…a current business processor had decided to come in and would set up…without people starting to

> form a co-operative, maybe there would not have been someone to come in and to actually create long term employment, in the industry.

In the meantime, they have been trying to create a co-operative for the purchasing and buying of gear. This has included meetings with harvesters from the area and workshops on how to create a co-operative and whether or not there is interest in a co-operative. One recommendation to come from this was to conduct a study on the feasibility of a co-operative for the region.

All of the respondents from the Anchor Point area who spoke about the presence of a co-operative (sixteen) thought that a co-operative could be beneficial for their community. There are different levels of a co-operative that were discussed. One harvester said that they wanted "Everything. You got to have the whole thing to be good. You got to have the whole shebang to be any good. Now, now you're creating survival of the fittest, survival in yourself. Now you know the ins and outs of everything and you'll still be hearing for this and that and you would." Another person interviewed saw a co-op as a way to possibly influence decision making. Another harvester said that they thought:

> I think well I would be content if we could get a co-op that could do the buying, selling, processing of their products that we can catch right now, we could expand to do more I suppose it would be alright, but that's the main thing that's needed, you know. So yeah, we need to be able to, we need to have a co-op who can buy, sell, and be competitive. Have to do that. And in order to do that you see you have to have people who really feel strong and knows what they're doing.

So rather than focusing on gear, this harvester felt that it would be more beneficial to the community to have a co-operative that focused on the buying, processing, and selling of

the wild-caught fisheries products that were obtained from the harvesters. In this manner, it was also felt that a co-operative could become a way to buy gear in bulk and to ensure that mandatory inspections for onboard safety gear were financially feasible for all the harvesters who were members.

When the harvesters had previously tried to establish a co-operative in the area, they had not been able to obtain full agreement from all the people that were involved ("it's no good for me to be a member of a co-op and or agree to be a member of a co-op and then as soon as someone comes in and offers you 5 cents higher you're going to go away, that's no good, you gotta be committed for the long haul"). An important part of the co-operative is the ability of the community to pull together and of the processor (whether a co-operative or not) to work with the harvesters. One Anchor Point harvester said:

> Community unity first, like harvesters and processing side of it, we really, we really haven't got the jointness there. We're not like a joint community in a way. Like take Port aux Choix, hundred percent of Port aux Choix boats sells to Port aux Choix…there's something we could do, we could do better for our community, we could get our harvesters together with our processor, but our, the processor we got here, I mean they haven't co-operated with me. Personally, they haven't come and said boy, we want your product, you know, they haven't, and I think that's some of the [problem].

Creation of stronger bonds in the community between harvesters and processers would allow the community to work more closely, much like nearby Port aux Choix. This ability to work together highlights the results from the 2006 report from the Great

Northern Peninsula Fisheries Task Force. Access to a community quota as well would be an attractive part to a co-operative for the people that are involved. This would create a structure where "if you would let the co-operative have control of the quotas, and make them, and then they get the boats to go out and catch it and then the work would be done in our area and get some smart people in and do much, much, more with our product". By doing this profits would stay in the community and expand upon both necessary and recreational opportunities that can be offered in the community. This mirrors the resiliency seen by Foley, Mather, and Neis in their study, particularly with reference to the Northern Peninsula region.

Voluntary Restrictions on Seasons

The 4R fleet voluntarily delayed the start of their shrimping season by one month starting in the late 2000's (Town of Anchor Point, 2012). The opening date set by the Department of Fisheries and Oceans has been April 1st in recent years; the harvesters in the 4R fleet wanted to delay the start of the season until May 1st in order to avoid capelin as a by-catch and the spawning season for the shrimp and have encouraged the government to follow suit. One harvester summarized how the late start had worked:

> DFO lets our quotas open the first of April and we've seen drastic things coming out of that, like quota cuts and spawning shrimp which we always believed was better on the ocean floor than on the deck of the boat, we made the decision that we will not fish, as a group of fishermen [from the 4R fleet], and the guys from PEI and New Brunswick that comes into our areas, they respects what we're doing and they will not be on our ground until the first of May. And steers clear,

> and like I said our quotas this year have increased by 15%, was recommended 35%, and where they fished up in the Gulf in their areas and it cost them 15% decrease in quotas, and we said it's time for them to take a look at something that we've done, it's time to fish in April, they said well what the hell are we gonna do, we said well you keep on going like that you won't have nothing to do in May or June either, right, you're gonna take cuts, so you better keep maintaining to keep the fishery going the right way.

In this way, harvesters were not only able to Co-operate across the fleet of harvesters in that region, but also with fleets of harvesters from other provinces. By communicating what they as a fishing fleet wanted to accomplish, other harvesters were able and willing to avoid those fishing grounds for the month of April. Harvesters report that these efforts have paid off. Since they implemented the later start date they suggest there has been less by-catch and their catch rates have gone up.

Anchor Point Town Council has also been active in lobbying the Department of Fisheries and Oceans about the voluntary late start as well as harvesters' concern about the future of the resource (Town of Anchor Point, 2012). They continue to have a municipal presence in the fisheries committee of Municipalities Newfoundland and Labrador and in the Integrated Coastal Zone Management Council.

Cod moratorium—coping mechanisms

In response to the cod moratorium, respondents described how vessel sizes changed in the community. On Fogo Island, it was noted that harbours with larger boats were impacted differently than those with smaller boats. One community member said:

> There were no boats going out, especially in a small community like this one where it was just smaller inshore boats, like Joe Batt's Arm has a groundfish plant, so they had you know, before the moratorium they had long liners that fished out on the Fogo Island banks and brought in other species and all this kind of things, same with Fogo with its crab plant and that kind of thing. But small communities like Tilting and Deep Bay and Island Harbour and places like that, I mean they wouldn't, there was no fishing activity, everything was just completely stopped for a while… I think the next year they started fishing lump roe for a week or two, and that was on the go, and you know, little things like that, umm, but the whole readjustment, the adjustment from fishing close to shore to adjusting to other species and fishing further offshore.

While the small boat fleet was a family based operation, a large boat was not. Fisheries had traditionally been a family based operation, with multiple family members dealing with the cutting, salting, and drying of fish. This system changed when the fishery became an offshore fishery with larger boats.

Aided by new types of vessels and gear, they were able to make the switch to the current target species, shrimp for the Anchor Point and crab and shrimp for Fogo Island and Change Islands. One harvester said that "the moratorium affected it a lot, big time on the first of it, until people got settled in. Then they got settled in, and the shrimp fishery picked up. If it weren't for the shrimp fishery, Anchor Point would be a ghost town too. If the shrimp fishery closed down, we're finished, Anchor Point is gone."

Not everyone was able to make this switch, but those communities and people that did are perceived as doing well. A harvester from Fogo Island said "but in hindsight

since then, the shellfish has been higher value than ever we had with groundfish. We would have people say around here that when cod was around and you were poor, when shellfish came up we done well, we done well since the moratorium." In both areas, rather than diversifying target species in the post-moratoria fishery, there has been a shifted dependency in target species. The province has moved from depending on cod to depending on shrimp or snow crab. This may be seen as supporting Hardin's view of exploiting a resource and then moving from one to another in favour of economic gain. One respondent from Anchor Point mentioned that they were unsure of what would happen if the shrimp fishery collapsed; unlike when the cod fishery closed, they felt there were very few species on which to rely if that happened. Again, this supports Hardin's view of resource exploitation and changing their dependence from one species to another. However, the dependence on cod was not just economic; it was also cultural.

While switching species has been the most prevalent form of dealing with the moratorium, there have been several other methods. One harvester said that:

> It's managed from a social perspective. So if [they] says well the plants gotta have work, communities have to survive, well communities, that's fine, and you need to have a fishery in Newfoundland with small boats and members and all that…it's in another 10 years [if] it keeps going the way it's going and people are not staying in the fishery, which I don't think they will, who's gonna work in the fish plant?

While there may be young people in the community, they may not always be interested in fishing. Respondents highlighted that there had been a decrease in interest in fishing post-moratorium. There was no money involved in the fishery, thus younger people wanted to

get a job where they would be able to make money. This respondent wanted more young people involved in the fishery to ensure that there would be a future for small-scale fisheries in Newfoundland and for their communities. However, there still has to be a focus on the ability of each harvester to make a living. If the current dilution of the fishery continues, this harvester felt that there would be no future for harvesters entering the fishery, allowing the current small-scale fishing culture in Newfoundland to disappear.

Alternative Gears and Returning to the Future - Cod pots and traps

The baited cod pot is an experimental method of catching cod that has been under development since the late 1990s and tried on Fogo Island since 2009 (DFA n.d.). While there respondents held varying viewpoints on the use of a cod pot, it is important to note that no one who had used the trap was interviewed. One spouse was interviewed. That person reported positive results of the cod pot due to the quality of cod that had come from it, since harvesters could immediately gut and clean the fish and get it onto slush ice to preserve it. The cod pot experiments have been spearheaded by the Shorefast Foundation as a part of their Ocean Ethic movement. The cod pot is viewed as "ocean and habitat friendly and the method produces a top quality product which, in turn, leads to higher prices" (Shorefast Foundation, Our Projects, "Ocean Ethic", 2014c). In terms of quality, it was stated that "it's a better quality of fish of course, but [it's also] a good quality of fish from a cod trap too if it's done the right way." There were harvesters who felt that the cod specifically caught in a pot was not better quality than that from a trap (when traps were used) or cod that was caught on a handline. There was agreement

among harvesters that between a cod trap, cod pot, and gillnet, however, a gillnet produced the lowest quality fish. One harvester said "I'd rather buy a fish from Denmark that's caught on a hand line than I would that's caught in gillnet, even if it's caught in Newfoundland. Because a gillnet fish is a drowned fish."

Although gillnet caught fish has been shown to be a lower grade (DFA n.d.), the cod pot experiments have caused some conflicts within the community over the higher price paid for cod pot fish and has led to the Fogo Island Co-op no longer being the conduit through which the potted cod is sold, as members felt that they should all be receiving the same price. This relates to how fish prices are set on a provincial-wide scale without differentiation between the methods that are used to catch the fish. There were reports of the cod pots being a success in terms of quality. Without the proper size vessel, a cod pot could not be used, preventing some harvesters from being able to use this alternative gear type.

The community cod trap is another proposed method of community engagement in the fishery suggested during the previous Change Islands fisheries product (Smith, et al., 2013). This method would have harvesters working together to harvest fish out of a community cod trap, as they historically had, in pairs or in small groups (one respondent said that they had started fishing one day when "my uncle had hauled a cod trap and it was full of krill, and it needed 2 strong men, but 2 strong men can't haul a cod trap, so they got me in their boat. And I was the 3rd strong man") on daily trips, where at the end of the day they would return home with cod that would be "cut" and processed at home. Historically, cod traps were used by groups of harvesters together. For harvesters this would minimize the amount of crew they had to hire and maximize effort and profits

from the trap, if they were able to work together to fish out of one large trap. For crew, it would decrease how many of them were able to work. There has not to date been an official proposal about a community cod trap to the government. Two harvesters from Fogo Island specifically mentioned that the cod trap would not be allowed again, even in a community manner, due to the impacts that cod traps had in the past on the fisheries.

Local Knowledge and Scientific Surveys

People in both regions spoke to the need for more surveys to be completed on their target species. The most heavily discussed need was for more research about cod that incorporates their knowledge of the historical cod fishery. One harvester said:

> Well, for DFO to do better studies on the cod. I can guarantee there's a lot more cod out there than whatever they're doing with the cod fishery. I do the Sentinel Fishery right now and…cod comes off the bottom at night and no one did get it then and now they do this sentinel fishery…and a lot of them is done at night…[and he] don't pick where he's gonna go. If they let the fisherman pick where he's gonna go and the time [of the survey], the catch rates would be way, unbelievably the difference. I can go out there and show them where all the cod [is], especially if they got a big boat and got the gear on it on their boats, so there's much more cod than what they're showing up with, right…I want to go out and look for cod in 200 fathom of water, somebody got their wires crossed somewhere, right. I mean the cod is [in] inshore water and it's chasing its main source of food, and the sentinel fishery is getting done in those depths of water and its, oh it never showed nothing up here and up there. Well it's never gone

> there…right now I fish the…well I fished cod one [place], 120 minutes we fished and it took me 2-3 minutes on them for to get 2,000 to 3,000 pounds. Right now they're getting up six nets and they're fishing them 6 hours later and they're catching 4 and 5 thousand pounds and someone's telling me the cod haven't picked up, something, like I said, wires got crossed over somewhere. So, I don't know.

This harvester had been involved in the cod fishery prior to the moratorium and continued their involvement in the cod fishery through the Sentinel Fishery. They felt that the Sentinel Fishery dictated where to fish and did not give the harvester input into either the time of day that cod were moving or their knowledge of where the cod had historically been present in that area. Harvesters in both regions of Newfoundland spoke to larger amounts of cod being present in recent years than in the past; the quotas still have not risen to reflect this. Harvesters want to be involved in the planning and creation of a cod study to examine this apparent conflict between their knowledge and the quotas that are enforced by the government. Harvester's knowledge of the area and the historical fishing grounds can then be incorporated into studies that already exist, such as the Sentinel Fishery. Local knowledge has already contributed to locally-initiated management changes; the late start for the Northern Peninsula began, for example, because the harvesters knew that fishing in April meant more by-catch and catching the shrimp before they had spawned.

Community Development and Sustainability

One recurring strategy of coping with changes from the cod moratorium that was discussed by interview respondents was temporary and even permanent mobility for work outside the fishery. Prior to the cod moratorium, there was a culture of fishing and staying in the community or surrounding area in the off-season. Historically, some fishermen from Fogo Island used to fish during the fishing season then go onshore to go logging for the winter, whereas in Anchor Point they would go to Labrador in the summer to go fishing there. Interview participants explained that post moratorium this has changed. Multiple jobs or commuting long distance are becoming an important way to remain in the community. This type of work has continued in different forms and has become more prevalent since the cod moratorium. Now people will fish when they are able to and then hold another job in the off season. This included harvesting fruit and vegetables in the Annapolis Valley in the fall, working at a moose camp as either a guide or cook, or fishing elsewhere (namely Labrador) during the off-season, rather than working with just the fishery in that region. All of these options still include involvement in the fishery. One harvester gave two such examples:

> So people in this community and the surrounding communities have, uh like my [spouse], [they] goes cooking in with the, with the outfitters for 5 weeks and a lot of the fishermen, some of [their] brothers, a lot of the fishing communities, they go into these camps guiding for five, six weeks, we got some people who in the fall will got out to Nova Scotia and PEI on the farms picking apples, or at the potatoes, so people, these people, have found a way to stay in the

> communities...now it's like you know, it's practically impossible now if you want to have anything, to make your living directly from the fishery the way I'm fishing, I'm into a small boat and open boat fishery, right.

This harvester felt that in their community it was necessary to diversify economic activity, even if it meant traveling, in order to stay involved in the fishery. This also means that they would be able to have their community continue forward in the future.

Even with all of these changes, people are starting to move back to the communities, either after working away for a few years, or to use the community as their home base while they commute to other jobs, typically in construction or in the oil and gas industry (Alberta, Labrador, offshore of Newfoundland). People will have lived and worked elsewhere and then move home. Despite moving back to their home community, they will commute to work for a few weeks at a time, generally working in either construction or in oil and gas, due to the money that can be earned in those industries. These people work year round in their commuting jobs. This work is typically located in three places that were discussed while conducting interviews: Alberta, Labrador, or Newfoundland. The rise of the oil and gas industry has brought more jobs for people to do in province. However, because this drilling happens offshore, they still have to work onsite. The oil and gas industry has brought on a large building boom in Newfoundland, so people are also working construction too.

Islands and Islandness

There were mixed responses to questions about islands. It is important, as mentioned previously, to note the differences among the study sites. Respondents from Fogo Island

felt that when the Co-operative was founded that they would not have been able to have their Co-operative work anywhere else. They said that this was because they lived on an island and did not have any other options available other than to continue creating and strengthening a co-operative. They definitively felt that there was no other option for them on their island due to access to other markets and distance from the mainland. When asked about whether the community would be impacted differently if it was located someplace else, one harvester said

> I don't know…if everything could be the same maybe, yeah I think it would still be the same. I don't know what would make it different, if you're an island, I think Fogo Island survived because it is an island, it is, we are so strong and because [of] being an island the Co-op was formed and everybody, I think people pull together more and have a better…understanding of the place they live and if they want to, they need a place to work, right.

This highlights how the harvester felt that their community pulled together more because they were on an island and understood the implications that came with living on an island, especially with regards to work. There was recognition of how people worked together to ensure that their community would have a place for work.

An individual involved in the processing sector when prompted about the impacts of being on an island said:

> Maybe…I don't know if that's been a disadvantage for us or not. I do know that were stuck out here on the northeast Atlantic right in the middle of the best fishing grounds in the world. That's definitely an advantage because Newfoundland is very fresh. However, if I go back and reflected on what you said

> in terms of, this as an issue, maybe because, maybe they're gonna let us die a slow death. You know, to support this island, costs a lot of money, costs an awful lot of money. And the province says, maybe that's why they're doing the things they're doing, by giving licences down in other places near the resources and so on, because we're hoping Fogo is gonna be choked out eventually. We die a slow death and we want to work.

In these terms, proximity to the fishing grounds is paramount to success as a community. Meanwhile, in Anchor Point they discussed the distance from major service centers and work options more than they did being on an island. They certainly still depend on the water and discussed their location ("right on the doorstep of the resource") as being important. In terms of fishing, the grounds are close to where they live, so as a harvester it is easier to get to the grounds before people from the mainland did. Both regions discussed their proximity to the resource as an important part of their life there.

There was more discussion of isolation as opposed to being on an island. There were people in both study areas who talked about isolation, both from major centers and the surrounding area, as one of the major factors in their community's development and as something that impacts them more than other things. There were fewer work options there, so commuting from home to an office job nearby was not possible; the type of work that they could find was what they could do. On Fogo Island one harvester said that:

> Well, I suppose in the fact that you know it's hard to have the commuter work force here its transportation system here won't allow it, you can't commute to Gander, other places to work, so I would think that yeah, it's probably been a

> disadvantage for people who want to commute back and forth or take the train to work other places, some of what we have, clear well pretty much got to work with it. We've got to fabricate ourselves within the boundary of Fogo Island.

Within the challenges of distance from the mainland, the last line, about fabrication within island boundaries, demonstrates how the community has risen to the challenge. There are other opportunities on the island, but the strongest one has been and remains the fishery. Each community felt that the fishery was their foothold for the future. Each community also highlighted distance and access to services and jobs as an important part of development for their community. This distance from major service centers, such as Gander, was mirrored in discussions had in Anchor Point, where there were minimal jobs available nearby, with only Flower's Cove and Plum Point nearby. While Anchor Point is not located on a small island like the other case study communities, they are a relatively isolated community on the larger island of Newfoundland. They still struggle with distance and isolation from major centres, much like Fogo Island and Change Islands. In these terms, they have still have limited options for work, with over half of the people in the town employed in the fishery or fishing related activities.

MAINE RESULTS

This section outlines the results from the Maine half of the research. This section discusses methods of limiting catch, licencing protocols, regional cooperation, and both region and community specific resiliency strategies. While each of these is presented separately in this chapter, they are intertwined and related to each other.

Licencing

Of the fifteen lobstermen interviewed in Maine, ten had bought their licences from the state and federal government prior to the implementation of the apprenticeship program, three acquired licences through the apprenticeship program, and one through the student licencing system. These numbers represent those who explicitly stated how they received their licence and are presented in Table 5.

Table 5: How Licences Were Obtained in Maine

	Monhegan	Swan's Island	Chebeague Island
Bought from State	2	6	2
Student Licencing	0	0	1
Apprenticeship	2	1	1

Prior to the implementation of the apprenticeship program, people who wanted to start fishing would mail in an application to the state and federal government and receive their respective licences for fishing in those waters. One individual detailed how they obtained their licence just after the implementation of the apprenticeship program. This lobsterman said that although they had previously held a licence, they needed to get a new one when the regulations changed: “It was 2 years that I didn’t have my lobster licence and I needed to get it, to go through the whole process…obviously now I’m

ok…and I know a lot of people that had always had one that just said then forget it, I'm not gonna go through that [to get the licence]."

Under the zoning system, each zone controls the number of licences that have to be retired and out of the fishery before a new entrant can enter the fishery. This has led to the creation of waiting lists and a limited entry program in all zones but Zone C. The location of an island within the zone can be problematic for island lobstermen due to increased effort on either side from a neighbouring zone. Swan's Island is on the border of Zones B and C. Zone B has a "five out one in" rule, whereas Zone C is open; once a person has completed the apprenticeship program they can enter the fishery with a licence. This has led to more licences being fished in Zone C than Zone B, leading to increased pressure from other harbours on the fishing community. While Monhegan is in Zone D, which does have limited entry, their community has its own licencing system and operates separately from the rest of Zone D. Zone F, where Chebeague is located, also has a "five out one in" rule for entry.

The creation of zones and the resulting limited did create an issue with the number of people who were being allowed into the fishery. The student licencing allows people to bypass the waiting lists, meaning that there are more people entering the fishery than are leaving it. One lobsterman said that the government "forgot to shut the back door" of limited entry by allowing the student licencing to bypass the waiting lists.

Interviewees noted that there are people who feel that the island limited entry licence program is unfair to mainland communities because it prioritizes the islands. One lobsterman from Chebeague said "I know a lot of the mainland people in this area don't care at all for the island entry thing, they think it's totally unfair." This demonstrates one

perspective on the island licencing program. In contrast, another lobsterman said "I think that it's essential that this specific island legislation, because otherwise they'll just be swallowed up…by the larger groups." By having the island licencing, it allows the islands to maintain an ability to have licences on the island, thus supporting the islands economy and community. One lobsterman from Swan's Island spoke about how it corrected a historical oversight in the licencing system:

> When they started closing licencing and then they actually did, limited the entry, we did not want our communities to disappear…once we proved [that] our community was losing licences, it was not gaining, was not getting like one back out of every, whatever…they see that, so then they went along with it but boy it took a long time.

The trend otherwise had been that licences tended to aggregate in mainland communities. The island communities were not getting the same numbers of licences back from the waiting lists as those mainland communities were due to the size of the island communities. There were more people on the waiting lists from mainland communities than island communities; thus they obtained more licences. There was the perspective that this could be used by people who had gone through the student licencing and let their apprenticeship lapse, thereby missing the ability to transition from a student licence to a full licence.

In reference to the island limited entry program, there was recognition of the importance of fisheries to islands in Maine. The two are linked together; by passing this policy, it could be seen as the state recognizing that importance. One lobsterman from Monhegan said:

> I think the system that they're putting in is probably a good start, I think they'll have to make changes to both to the general policy to specific islands, because it's not enough experience to see exactly what's going to work, so I think having that, they should recognize that some flexibility is going to be important but the policy stance of you know, wanting to keep the island, island fisheries going, is a good one and its one they made, which is great.

In this lobsterman's eyes, recognition of the importance of islands has now been formalized by the state of Maine with the creation of this system. This system will likely need revision in the future as it continues to be implemented, but it is a starting point for the policy to go forward in the future and for the islands.

Monhegan entered the Island Limited Lobster Licence program in exchange for a higher trap limit. When they entered, it was with the understanding that people from off island who had completed the apprenticeship program could move to Monhegan immediately and begin fishing, skipping the mainland waiting list. This was done with the hope that it would encourage people to move out to Monhegan. They must establish residency on Monhegan for five years in order to be able to move off island and take their licence with them. Previously, a lobsterman would have to go through the informal apprenticeship program on Monhegan of four years fishing with an island captain in order to begin fishing. Tradition has been that after apprenticing, the apprentice would ask each captain for permission to start setting traps and obtain a verbal "yes" from each captain on the island prior to joining the Monhegan fleet. With joining the island licencing system, one lobsterman said that:

> Hopefully we will have people coming up through and starting that way, and possibly accommodation, our newest person who joined, [they're] not an unknown to the island, [they're] from a local port and [they] used to fish out here as a sternman a long, long, time ago, so it wasn't completely unknown, but still, even with that known it was still weird.

So although the newest people joining were previously involved in the community, it still went against island tradition of asking permission to join the fleet, but there was acceptance of that for the benefit of the community. Two people felt that the island licencing program was necessary and that it would attract people from the mainland who would not have moved to Monhegan otherwise, thus buoying the community. One felt that the offer of a licence was not enough to attract someone to move to the island for a long term period that had a family. They would not want to uproot their life on the mainland in order to obtain a licence and live on Monhegan. One person did mention that it would help the community to bring more people there, even if it was for the requisite number of years to be able to move off island with their licence intact.

There were two distinct feelings related to the island limited entry licence program on Swan's Island. One perspective was that it could help the island to maintain or recover population by allowing people to get into the fishery sooner rather than later, and to get off of the waiting list. One respondent said "I think most of them that are on the waiting list are like working as sternmen or whatever now, they would have had their own boat and been doing it." Swan's Island has already had one person move off of the island because they were not able to get a licence. They moved to a mainland community in neighboring Zone C, which is open. The other feeling was that it would impact the

amount of traps in the conservation zone. One lobsterman interviewed felt that if there were more people fishing, there would be fewer lobsters to be caught for those fishing. This increased effort would lead to decreased profits for each person, thus making it harder to create a living from fishing. There was also a feeling by those opposed to the island licencing system that it would allow people who were from outside the island or state to begin fishing. An individual will do better without the island licencing, as there will be fewer people on the water, but the community will not do better. The fewer people there are in the water, the better each individual lobsterman does.

On Chebeague this was seen as a licencing program that could help the community. It could help to recover or maintain community population and could help maintain the fishery presence on the water. One lobsterman said:

> I know that Chebeague now is being phased into the island entry, licence entry program and I was for that, just because I could see that if the island lost a number of licences to people who were ahead of the list on the mainland, us losing a number of licences, some of them might think well hell, we'll have a little more room, little more per person, but the way I see it if there was any space at all vacated it would just be encroached on by people from elsewhere anyway.

Due to its location in Casco Bay, Chebeague has pressure on all sides from the large numbers of other lobstermen in the zone and the nearby population centers on the mainland. Lobstering is the main industry on Chebeague, with very little presence of other fisheries on the island. There is less access to other jobs compared to the mainland. Despite this, Chebeague has a high number of commuters who live on Chebeague but

commute daily to the mainland due to the proximity to Portland and Yarmouth and the short boat ride.

Methods of Limiting Catch

Methods of limiting catch for the lobstering industry in Maine are mainly related to trap limits; with the conservation measures mentioned previously also playing a role. For people who followed the lobsters' seasonal migrations, the changes that came from zone management had a drastic impact on their ability to fish. Once the 49%/51% rule was created, this changed the geography of where they were able to fish. One lobsterman from Chebeague summarized their experience with the rule like this:

> So, the state, who never thinks anything through to the end, said well ok we'll fix that; this'll only take a second. We'll make a law that you have to fish 51% of your traps in the zone you're registered into. So in other --words you can't fish out of Jonesport…and then bring your traps down here. You gotta have half your traps here and half your traps there, which is impossible, ok. Well what they did when they passed that was it limited movement for guys like me who had traditionally crossed zone lines. So all of a sudden I have to fish 51% of my traps in my zone and I can't fish, I can only take 49% of my traps to another zone. So, they screwed me again because traditionally we fished all our traps in another zone.

This lobsterman said that the limits on where they could fish traps were the regulation that had the most impact on them. With the limit in place, they had to change how they fished to fit the new zone lines, which then impacted when and how they could fish.

Trap limits and the opening date of their season have been a bargaining tool for Monhegan. One lobsterman summarized some of the many changes that had occurred on Monhegan in relation to their trap limits, giving a timeline of when trap limits changed and why. The self-imposed trap limit set by Monhegan in the 1970s was only loosely observed. The trap limit was officially set in 1995 because island lobstermen were struggling to maintain their borders at that time. The community "went to the legislature and got the legal right to determine who could fish here and at that time they…gave us a 600 trap limit", thus enforcing a strict trap limit in exchange for an island-only apprenticeship program. After this they wanted to move the start of their season forward by two months to the beginning of October in order to fully compete with other harbours. Their exchange to start earlier in the year meant that the state decreased the number of traps that could be fished, which went from 600 traps to 300 traps in the Monhegan zone. This lowered trap limit was difficult for island lobstermen. They felt it was not enough traps to make a living from lobstering. Most recently, in order to gain more traps, they entered the island licencing system with modifications to their existing regulations. They now have a limit of 400 traps. They have the only closed season in the state and pointed to this being a possibility for the entire state in the future. By closing their season initially to start at the beginning of January, they used to fish during "hardshell" season, when lobster was at its highest economic value. This speaks to the molting seasons of lobster, typically in summer and fall, where they are better suited for canning and processing as softshells than as hardshells, which are better suited to longer term storage or shipping. Lobstermen in each community noted that the price for softshells is typically much lower

than that for hardshells due to the abilities to store or process them. One lobsterman said this about the changes in the season:

> Yes, as long as, they don't have to fish the exact same time, but staggering fishing at different parts of the coast for you know in the summer…on shedders, fish fewer traps or something so the market isn't glutted. I mean, I was shocked when we went from winter fishing to fall fishing the junk lobsters that we catch now that, the shedders and the softshells compared to what, and I hardly knew what a softshell was. To see the uh, the quality of the lobsters deteriorating, we fished earlier and earlier, it was quite a surprise to me.

Groundfishing and Changing Species

While groundfishing was not the focus of this research, there were two particular issues that were discussed surrounding it. As with Newfoundland, groundfish, particularly cod, were the initial fishery that helped to settle the coastal and island communities in Maine. As the price of lobster rose and the price of groundfish fell, people began to move away from groundfishing in favour of lobstering, leading to the current dependency on lobster throughout the state. One former fisherman talked about how they had lost their groundfishing licence. They said:

> I had a federal permit, I had a groundfish permit, but the government took it away from me, so, I had intentions to go, but back in the 1990's the government encouraged people, because of the groundfish stocks were so depleted, they encouraged people to involve themselves in other fisheries. So a lot of people switched over and went lobstering, or herring fishing, or scalloping, so the uh, so

> the resource could replenish itself and then in the end, the government allocated your fishing history, your future fishing ability, based on your history. So the people that actually tried to protect the resource and didn't go fishing, got penalized, they got their permits taken from them or allocated very, very, few days that they could fish, and the people that exploited the fishery, that kept going and pounding on it, they were rewarded with more days to be able to fish, so the government encouraged one thing and then turned it and did a complete flip and completely messed with the people that did what the government encouraged them [to do].

Due to this change, this former fisherman now focuses solely on lobster, with no groundfish licence to fish. This follows the dependency on lobster theorized by Steneck et al. (2011). This has led to less diversification in the fishery and a higher dependence on one species. A respondent from Chebeague said "we've become less dependent as a whole on fisheries, but within the fisheries we've become more dependent on lobster."

Following the allocation system, in order to have fishing be financially viable, fishermen need to lease quota from other fishermen in the sector. When there are "choke" species (species that have a very low quota but are very abundant) this can be difficult. One fisherman felt that vessels under 45 feet should have an exemption from the sector system so that they are able to go for smaller amounts of fish. They also said that by having a financial backer they could create community quota allocations:

> [they] could buy [them] out, retire half the quota, and set the other half of the quota up on permits with restrictions and give them out in lottery or let people use them…like in Alaska they got these community development quota…where you

> can say…Monhegan gets two permits, Port Clyde gets 3 permits…Gouldsboro gets 3 permits, and Mount Desert gets 3 permits, and each permit has 50,000, 100,000 pounds of fish on it to catch.

This would then give control over the resource back to the communities, creating an ability to focus on diversifying efforts, thus reducing the dependence on lobster.

Community and Regional Co-operation

Each community in Maine has its own traditional fishing territory. Expanding outward from that are the zones. Each zone is able to discuss things that they want to do within the zone. There were two particular instances of regional co-operation on Swan's Island and Chebeague Island that were discussed in interviews. These were the Swan's Island Fishermen's Co-operative and the Dropping Springs LLC (Limited Liability Company). The Swan's Island Fishermen's Co-operative owns a dock in Brooklin, a nearby mainland community. A respondent said:

> They were selling to a wharf over that way and the wharf closed…so they asked us to sell over there, the seller over there asked us if we would do that, so we did. And the next year, somebody leased the place where their buying station, the other buying station was, but a lot of them still wanted us to come so we have been doing that, for some of the fishermen went back to them, but they don't have a lot of options to sell over there and so it's close so [we do it].

This cooperation has led to people from Brooklin selling their catch to the Co-operative, benefitting both groups. Similarly on Chebeague Island, the Dropping Springs LLC is

comprised of mainly members from Chebeague but it also has members from mainland communities, such as Yarmouth and Freeport. They have approximately 30 members.

Cooperation between harbours has traditionally been limited due to the competition over fish territory, as documented by Acheson (1988). Monhegan in particular pointed to their history of conservation and their closed zone as a source of tension. Due to this closed zone they do not have tight bonds with other harbours. This has created tension over fishing territory, which has led to separation from the other harbours in terms of fishing. One respondent spoke of one instance where the tension was so strong that it was necessary for the state to step in for remediation between the communities. It was resolved with the state's help and with the establishment of firm boundaries for the island's fishing zone.

Regional co-operation has also taken the form of the islands banding together to work on issues. This has been accomplished on an informal level as well through the Island Institute and the Maine Islands Coalition. The Maine Islands Coalition is comprised of community representatives from each year-round island in Maine. They discuss issues pertinent to each island and how they can use examples from other areas to strengthen their own community. This inter-island cooperation was notably demonstrated in the island limited entry program, where the islands communicated with each other throughout the process in order to get it passed into law and ensured that all unbridged islands could enter into it if the lobstermen on each island wanted it for their community.

Zone Management

Zone management (established in the mid-1990's) can allow each person to have more of a presence in the management of their fishery, while simultaneously influencing where people were able to fish. These were just two of the results of the implementation of general zone management that were discussed in interviews. When zone management started, it implemented a trap limit across the state. For lobstermen who had a large number of traps, a decrease in traps lowered their profits. Zone management also changed the geography of where lobstermen are able to fish. Respondents who had been involved in zone management chose to do so because they wanted to become involved in the management of the fishery that had supported their community.

Monhegan has had its own conservation zone since before the state had any form of zone management or zoning. This started with the Monhegan fishing season, which was the first and only implemented restriction on lobstering seasons in the state. They instituted a trap limit before the state had one and had an informal apprenticeship program prior to the state having one. They feel that this type of conservation has strengthened their fishery. Lobstermen on Monhegan also felt that they were different because they had a season tied to their conservation zone. One lobsterman from Monhegan said:

> Having a closed season is so unique and the problems that [it] creates [are] so unique, and we're the only place other than Swan's Island that has a defined, a legally defined territory. [Every other harbour] has an informal zone, but we have it a legal one and we have a closed season so that's what makes it different, it's really the closed season. Imagine anyplace on the coast that nobody fished for a

while, everybody would have tried to sneak in, there'd be no hope, it opens up a whole different can of worms.

This difference of having a closed season sets Monhegan apart from surrounding harbours and helps them to maintain control over their territory.

The Swan's Island conservation zone was created because lobstermen from Swan's felt that they would be able to have similar catches with less effort. The zone also means that the state enforces their boundaries to lobstermen who have not signed on to fish in the conservation zone. In order to fish in the zone, people must get a different set of tags from the state for their traps. Lobstermen who fish in the conservation zone must always set the limit (550), even when they move their traps outside of the conservation zone, in both state and federal waters. While anyone can fish in the conservation zone, not everyone from Swan's Island does. Although the field researcher was unable to interview anyone who fished outside the conservation zone, there are people from Swan's who do not fish in the conservation zone so that they can fish a larger number of traps. When asked why they fished in the conservation zone, lobstermen replied that it was due to that being the territory that Swan's Island had traditionally fished in, as well as family ties to the fishing grounds.

Marketing, Selling Catch, and Processing

Island lobstermen typically have fewer options for dealers to which to sell their catch as compared to their counterparts on the mainland. For Chebeague Island there are three options on Chebeague and three smack boats from the mainland. Although Chebeague is

closer to the mainland than Monhegan and Swan's, there are fewer options for selling than there are for fishermen on the mainland. One lobsterman said:

> No, I think that all islands, that if you lived on an island that was connected to the mainland by the bridge, you probably wouldn't be affected. But if you're [on] a remote island, and you don't live near a city, like we have access to….the city's right there. I mean there's a lot of commerce in that city which creates a lot more opportunity for different markets. You know, Downeast, if you're from Jonesport[-Beals], you're probably kind of in the same shoes that we are in the remote island that we are, even though we're only a few miles from the mainland. Because they don't have the market you know, the ability that we would if we lived on the mainland, if we fished out of Portland.

Economic centres, such as Portland, tend to create commerce and movement in markets. Chebeague may be located close to Portland, but this lobsterman felt that they are far enough away that they do not have the same access to those markets that they would if they lived on the mainland. This is similar to other island or rural communities, much like Jonesport-Beals, which is located in sparsely populated Downeast Maine. They have limited market access, despite their bridge to the mainland. On Monhegan every lobstermen sells to a different dealer on the mainland, bringing their own catch over to the mainland at the end of the day. Lobstermen in all of the harbours said that there were times when they sold their lobster to different dealers because they could get a higher price from one dealer versus another. This of course was different for people who belonged to a co-op or had loyalty with one particular dealer. They would have remained with one dealer or with their co-op.

One of the three dealers on Swan's Island stated that they had no problem selling their lobsters due to the quality of the lobsters. They felt that their location and proximity to the mainland had less to do with their ability to sell the product than the quality of their product did. With a high quality product, they said that buyers are willing to come to the island to buy the lobster. This is even with the costs of barging a large truck out to transport the lobster off island and the logistics of working through a boat schedule. A quality product is more important than any logistical issues that may come up. Swan's Island is also a base for lobstermen from neighboring Frenchboro (also known as Long Island) when it comes to selling lobster. Due to the locations of each islands fishing territory, each community has different times when they have high catch rates. For July and August, Swan's Island has high catch rates. In September, Frenchboro has higher catch rates. This lobsterman felt that the location of each community determines when each place gets highs and lows.

The price of lobster in Maine fell in the summer of 2012. This price crash had impacts for lobstermen across the entire state. Selling lobster could have been a problem in some areas in Maine, leading to tie-ups, where lobstermen would not leave the dock. On Swan's Island they found a unique way to work around this: "we did not tie up here because we hauled Monday, we haul half a day Tuesday, you take off Wednesday, so we worked a day and a half out of the first three days, we go to haul Thursday and haul half a day Friday, and we take the weekend off." This method meant that they worked together to balance their needs with the needs of the market, thus lessening the impacts of the price crash and avoiding a complete halt of work for the community. On Monhegan they were not fishing at that point due to their season, but they did monitor the prices before

the fishing seasons started. One lobsterman suggested that seasons be instituted across the state to decrease the summer influxes of lobster. There could be one season in the winter and one in the summer to maintain the lobster for the summer tourists, but avoiding a large influx on market during the summer. A part of the issue was the lack of processing in the state of Maine, as a large portion of the lobsters caught in the state of Maine are processed across the border in Canada.

Marketing was highlighted as something that needed to change for the state across all three islands. In particular, the Calendar Islands Lobster Company was created shortly after the Dropping Springs LLC. They have changed how their lobster is sold and marketed. They have pushed to create value-added lobster products using Maine lobster to distribute in Maine and New England. Almost all of the lobster used in Calendar Islands Lobster Company is from Dropping Springs, which is supported by mainly lobstermen from Chebeague. The lobster is processed in mid-coast Maine, keeping the profits in the state. Their products were discussed and are as follows:

> Right now we still have lobster stew and we are creating a whole line of appetizers, lobster rangoons and lobster quiche, and…lobster puffs, and we've had lobster pizza, lobster mac and cheese, and then we moved away from that. We do have split tails, frozen tails, and what we'll call naked lobster which is basically [High Pressure Processing] lobster, out of the shell but uncooked.

By changing how they market the lobster, they were able to expand their profits and help support not only their community more but also other communities in Maine. With value-added products, they are able to get more per pound for their lobster than they would have if they sold the lobster straight from the dock.

Groundfishing and bait fishing have their own set of problems that come with selling and marketing their catch. One fisherman said that in order to make groundfishing profitable, fishermen have to be able to lease the quota at a low enough price to be able to make a profit based on the prices in the fish market. Like with lobster, very little of the processing of groundfish is done in state. One fisherman said: "pollock is an industrial fish, that stuff usually goes to Canada and gets salted, and then most of the hake went to Baltimore, the codfish, the codfish, the high end stuff, greysole, haddock stuff like that, was all whacked up and sold locally." This highlights how spread out the processing sector is in Maine. Bait dealers obtain the bait that they sell from a variety of sources. One dealer on Swan's Island is able to buy bait from a boat that delivers the bait directly to the dock; the bait is caught in the Gulf of Maine. Traditionally bait used for the lobster fishery is Atlantic herring.

Community Development and Sustainability

Policy and management decisions can impact whether or not people are able to live on an island. Interviewees pointed to the schools on their islands as a concern. It is the hope of those on Monhegan and Chebeague that access to the island limited entry program will bring lobstermen with young families, thus bolstering the school's population. One lobsterman from Chebeague said:

> So I think that it's, it's going to impact us in a positive way, because lobster is the only industry we have here on Chebeague. I mean we've got some carpenters, and we're got a boatyard, and a store, and the inn, and a couple seasonal businesses, but, we got 30 odd lobster boats that employ people, that's the economy here on

> Chebeague, and we've gotta keep that going so that people can stay here, and young people can come, and the schools can stay open and we can be a thriving community. Because once the young people stop coming here and the school closes, we're done.

While this is tied to the island licencing program, the health of the school was an important to respondents. This was part of the reason that they chose to secede from their former mainland community of Cumberland, to protect their school. Monhegan has had a small school population in recent years, but has worked with other island communities in the Teaching and Learning Collaborative.

Another government decision, albeit not related to fisheries, is the presence of a post office for the island. One community member on Monhegan said:

> I think one thing that's coming down the pipe that will affect us also is the change with the post office. I think that's going to be moved to a half time, so that's gonna be different. I don't think it will change the postal service that we get as far as, I mean well still have, we only have mail three days a week but you know that's a full time job. That's traditionally been a full time job for somebody, living, with health benefits and all that and that's gonna change.

Losing a full time job for the community could be difficult, especially when someone was dependent on that income. The mail service itself is only delivered three days a week because that is how often the boat comes to the island. This change would have the post office open three days a week, when mail is delivered, rather than being open the current five days a week.

Housing on islands is traditionally an issue; this in particular was seen on Monhegan due to the large swathes of conservation land on the island. The cost of living on the island led to the creation of Monhegan Island Sustainable Community Association (MISCA), which has also been helping the island develop business opportunities and living quarters. Likewise with Chebeague Island, there was discussion of their past secession from Cumberland, which was due to the presence of the school. The people on Chebeague felt that without a school they would not be able to attract the same amount of people that they had and that it would destroy the community. Since seceding they have maintained their school and even changed which community they send their children to school in on the mainland. Much like MISCA, the Chebeague Island Community Association (CICA) has worked in the community to develop housing opportunities on the island and to support businesses on the island. Both communities were supportive of local agriculture movements on their respective islands.

Responses to a Changing Fishery

For the respondents involved in lobster industry, the state regulations were the ones that were discussed in interviews. Licencing (limited entry, waiting lists, and apprenticeship programs) and methods of limiting catch (trap limits) are all managed by the state, with the exception of licences for fishing in federal waters. The main focus of this work was on state-controlled regulations and management decisions. No new dynamics have appeared in recent years, according to one participant, because many of the regulations that exist for the lobster industry have existed for a long time and are not recent. They said "And it was very, I mean, the lobster fishery had conservation measures…the

conservation management tools that they had 50 years ago, they still pretty much have the same ones, they've tweaked them a little bit, but now they're into managing people." This lobsterman felt that the state was focused more on managing the people's actions on the resource. Zone management also decreases each individual harbour having its own rules that need to be enforced, something that one respondent highlighted as a source of problems for the state. It would be hard for the state to enforce each community's rules; instead the state has encouraged them to work together in a zone.

The most common form of lobbying completed by island residents was attending meetings and talking to the state of Maine Congress. This form of lobbying has created positive results in the past, leading to the implementation of policy and management changes that the community wanted. Monhegan has collectively lobbied the state on several occasions for their conservation zone. As discussed previously, they lobbied the state to establish boundaries for their zone, to change the starting date of their season, and to get a higher trap limit. They lobbied the state for the good of their community.

Similarly, Swan's Island had lobbied the state to create a conservation zone. One lobsterman interviewed said:

> I was always for conservation…I always looked at some of our fishermen on the island…they set out, not a very large string of traps but always had as many lobsters as the guy that had a lot of traps, so I kind of figured, you know, god, they don't have to, you know, beat their brains at it, and they ended up just as well off, if not better off, and they had quality of life much better off.

This conservation zone still exists around the island and a large portion of the island lobstermen fish in that zone. Recently, lobstermen from Swan's Island lobbied the state

to get their trap limit changed. This process was on-going during the site visit. In the time period since visiting the community, they were successful in getting their trap limit changed from 425 to 600. Some lobstermen felt that a higher trap limit would create higher catches, while others felt that a lower trap limit would still allow them to have the same catch rates.

Islands and Islandness

Life on an island was attractive to the people interviewed. When looking at Monhegan in particular, all of the people interviewed chose to live there because despite the challenges, they loved the life and did not want to miss it while living onshore, even though none of them had been raised on Monhegan. They pointed to the sense of community and the non-traditional life style. This theme existed only for islands that were unbridged. However, in terms of access to markets, bridged islands can sometimes have as many if not more challenges than unbridged islands. One comparison used was that of Jonesport-Beals, located in Downeast Maine, as discussed previously. Jonesport-Beals is located on an island that is accessible by bridge, but Downeast Maine is sparsely populated, with few markets and even less processing capacity than southern Maine. So access to the mainland may not be as important as access to markets in the eyes of lobstermen from this community.

The source of power on an island can also be a problem; this was particularly highlighted on Monhegan by both respondents and community meetings attended. The main source of power is a diesel generator operated by people who live there. With the changes that have come from the fishing seasons on Monhegan, this has made changes

for the people who operate the plant. Now that the fishing season starts in October and ends in June, there has been a shift in the workers and how many people stay on the island. Lobstermen will fish from October through to January, haul their gear up, and leave for two months, returning in the spring to continue fishing. This has led to a much smaller population base for the island than has historically been present. One lobsterman said:

> We've been in a position in the past couple years…my [partner] has to run the power company. There's no one else here to make sure and do the daily checks on the generators, so we can't leave and we want to leave, you know we don't want to be here for three months straight, we want to go inshore and that's been a negative impact of the change of the industry.

This highlights how low the population gets during the winter and how the fishing season impacts that. This also demonstrates how dependent the community is on fishing. While the change in the opening date has been positive in terms of competition with other markets and has supported the community, it has also had the aforementioned unintended consequence for the community. These consequences have been hard for the community.

Islands have been impacted by technology changes. One lobsterman had this to say about certain aspects of technology and the community:

> I think the thing that's changed this community the most, when I got here they were just starting, the people were people that didn't have phones, cell phones, these dishes [with] two thousand, three thousand channels on them, and computers, have completely botched this fucking community up. I mean just brought it to its knees. The people stay home and watch TV all day and play on

> their computers, or play these incredibly violent shoot 'em up games, even the sternmen, it's like now, the sternmen, when you don't go fishing, they stay home and they're either drunk or high or most of them, you know, most of them, you know they have wake and bakes. They get up and get smoked up and then they go play these incredibly violent fucking computer games, you know. They're not down here learning how to splice or paint buoys or trying to figure out the business so they can get in it.

This behavior, the lobsterman suggested, would be different from someone who was trying to get into the fishery through apprenticing versus viewing working as a sternman as a seasonal job. This lobsterman has observed fewer people who have focused on using their time as a sternman as training for a future career as a full-time commercial lobsterman.

Heightened technological advances such as faster computers and improved internet access mean that people are able to work remotely from where they are living. This could, in turn, bring more people to the community to support it. One lobsterman on Monhegan said that

> I think that we should be looking at diversifying our population, besides fishermen, which we do need them as well, but needing people that, it would be great to have people who could somehow bring some sort of industry or just have their own support through an offshore or online base or you know home business base because that way it wouldn't be, we wouldn't have people coming out needing something that someone else might have, need or want, and just be able

> to support themselves and want to stay here during the months that perhaps like the fishermen want to leave.

This could help communities to have a stronger support base rather than being dependent on lobster as an economic driver. This would boost the population during the months when fishing is not active and help to stabilize the community when fishing is fluctuating.

Distance from the mainland was discussed in each community. Each community had its own perspective related to their distance from the mainland. One community member from Chebeague said that:

> Chebeague is an interesting location, because it's at once totally rural and yet its minutes away from Portland. So there are, in terms of employment, there obviously are a lot of opportunities in Portland that are not available to people on other islands, I would say, and a lot of transportation issues. People can get things done, get out and move around, and do all that, so that impacts how you, the logistics of how you work and how you interact with your industry.

Due to their proximity to the mainland, Chebeague has a large number of people who commute to the mainland, "I think we have 67 people commuting to the mainland every day to work…which is a pretty substantial number", according to one respondent, in addition to the traditional island occupations (lobstering, caretaking, carpentry, etc.). While they are close to the mainland, they still have transportation and logistical problems that can come with living on an island. They have the contradiction of ease of access, leading to all of the commuters and access to services, and the challenges of

access, living within a boat schedule and the higher costs of moving products to and from an island.

Monhegan is different in terms of proximity to the mainland; they are farther away from the mainland than either Chebeague or Swan's. One lobsterman from Monhegan said:

> It used to be that there was an advantage to living on Monhegan and fishing in this area because you were close to the fishing grounds…with the advent of bigger, faster boats that meant that it was totally lost, and somebody from Friendship can fish this area just as efficiently as I can, so unless there's some special rules about it, I think the fishing communities on islands would vanish.

So with technology advances and bigger boats, lobstermen from Monhegan felt that they had lost their advantage in the fishery. Due to their location offshore, they were closer to where the lobsters were, especially in the winter. Their access to lobster was easier when boats were less powerful because they were already where the lobsters were and did not need to travel for a long period of time to get to the fishing grounds; once boats became more powerful, this advantage was gone as mainland lobstermen were able to reach the grounds in a shorter time period than before. This connects back to access to the lobstering industry with the island licencing system. Without giving an incentive for moving to the island (a licence without the waiting period), it could be possible for the community to lose residents who would be attracted to living onshore. This lobsterman felt that having the limited entry program would help the island community to continue to exist in the future.

A lobsterman from Chebeague spoke to not only the importance of the island but also the comparison of their island to other islands in Maine. They said:

> I think Maine obviously recognizes the importance of its coastal communities and the people that lived there year round and wants to support that, so yeah, absolutely. But as far as I think, we're just another island; I don't think because we're in southern Maine or have more benefits than people on you know, Monhegan.

To this lobsterman, their island was no different in terms of impacts than any other unbridged island off the coast of Maine. Other island communities did not always share this perspective however. Respondents on Monhegan, for example, cited their history of conservation as unique in coastal Maine.

DISCUSSION

This section will compare the case study communities and draw out the differences and similarities between them. It will demonstrate how themes discussed in interviews relate to the literature reviewed and the research questions posed. It will point to next steps that can be taken in researching fisheries policy and management and island communities, particularly within the research communities. It will also reflect on the role of the researcher in the research and how that relates to the process that occurred. It is also important to note that this research relied heavily on the importance of LEK (Local Ecological Knowledge) and LET (Local Ecological Talk). Palmer and Wadley (2007) distinguish between the two by using LET as a subsidiary of LEK, where LET can influence those around them, arguing that people can use a part of their knowledge as opposed to their full extent in order to exert this influence.

Personal Reflection on the Role of the Researcher

This topic is one that interested me on an academic and personal level, thus requiring writing of a reflexive nature to examine my role as the researcher and how that has impacted my interpretation of the data and even the nature of the questions I have asked and ways in which data have been collected. Academically I have focused on community development and sustainable resource use and personally I am from an island off the coast of Maine. My community (Cranberry Isles) has been mentioned occasionally throughout this work, particularly as a part of the Island Limited Lobster Licence program. Cranberry Isles and Swan's Island are both part of Zone B under the zone management system. However, I had never visited Swan's Island prior to my research.

Likewise, as a child I met other school-age students from Monhegan occasionally at the former Inter-Island Event, but I had never visited there and had not kept in contact with any of the students from there. While all of the documents that I reviewed and the connections that are made in this thesis are well documented by both myself and other academics, some of them were also ones that I have personal experience with from my childhood. Fishing has been the lifeblood of the Cranberry Isles for hundreds of years; this dependency is mirrored in the research sites chosen. Lobstering is what has sustained my community as well as my family. It was due to this that I became interested in sustainable resource use and how community development could help allow island communities to continue in the future. That being said, how policies impact island communities is something that I observed both academically and personally. Academically, I had tracked and read about how small communities were influenced by policy and management decisions, including influences on their fisheries and other aspects of their development. My academic interests have been propelled forward by my personal interests.

I had a few connections on each of these islands; these connections became a part of the snowball process of gathering respondents and creating initial contacts in the community. These connections happened because of the networking between island communities in Maine, for me in part due to the Island Institute and Maine Sea Coast Mission.

The communities chosen were ones that I had not visited or did not have an intimate familiarity with from previous interactions. Each community had similarities to each other, but they were not identical in any respect. These similarities were ones that

could be compared to my home community. This started out as my lens of understanding; while working it shifted from being my lens to being a point of comparison and understanding. Many of the types of policy and management situations that were encountered during field research were ones that I had encountered before in my personal life. I was then able to supplement and expand upon the original point of comparison by delving into the research and teasing out new ways of understanding by looking at it from someone else's perspective. This is comparable to having a roadmap that gives a general layout of an area, but is not crystal clear in resolution. With the interviewing and analysis process, the area became clearer and clearer, with more defined features and directions. Things that had appeared large or small at the outset were occasionally the opposite; there was a large learning curve on the issues that I encountered and what I learned. At times while in the field, it was difficult to separate the academic and personal aspects of the research. Upon reflection once I returned from the field, it became clearer how to separate the two and how to look at the data with a more objective academic view as opposed to a wholly subjective personal view. I tried to balance the two viewpoints; to allow the subjective nature of my background to become a useful tool in analyzing and understanding the issues that I encountered and wrote about in my thesis. This allowed key realizations about results to come about as part of the research process.

The above observations follow in the tradition of reflexivity in the social sciences. While I was in communities that were similar to mine, they were not mine. Chacko (2004) comments on this in research conducted in rural India; the communities visited were similar enough to not render her a full outsider, but different enough that she was not from there. Due to my background, it could be perceived that I would want to verify

that communities are unjustly affected by government decisions. This follows the misconceptions about case study research that Flyvberg wrote about and corrected. Flyvberg (2006) says that instead of tending towards verification, hypotheses tend towards correction (237); I found this to be true, as will be discussed further in this chapter. In that trend, I found that my position in the research was beneficial, but not so much that it unjustly biased the following results and interpretations. I recognize that this is my perception of my place in my research.

Comparative Discussion

Licencing

The licencing systems are different in each country but they have similar problems; entry for youth is difficult in each place. Due to how licencing is managed at a federal level on Newfoundland, licences are a commercially traded entity. In Maine it is a limited entry based upon waiting lists. Groundfishing is also a commercially traded entity, with the added complication of sector management and challenge associated with the ability to buy a licence with the appropriate amounts of quota attached to it to make fishing profitable. The way that lobstermen and fish harvesters enter the fishery is different, but no matter what, is difficult to enter. There are financial and time barriers to entering the fishery. The key difference is due to the system in Maine. The entry limits were set in place by lobstermen who were already fishing and were set by each zone council. Each community spoke about the ability of young people to be able to get into the fishery and how this impacted them. In particular, respondents from Anchor Point spoke of the Enterprise Combination Policy as one that made it possible for people to

remain in the community and to have a strong fleet. Despite this, there were still financial barriers to people who entered the fishery in both Newfoundland study communities. In Maine, the biggest concern in terms of licencing was the wait time required to obtain a licence and the impacts that could have on the longevity and sustainability of the year-round community. The Island Limited Entry Licencing system was seen by some as a way to combat the difficulties that some had with entering the fishery and to bring more young people back to the community. Others viewed it as adding more effort to an already crowded territory that their community controlled, following with Acheson's (1988) discussion on harbour gangs.

In previous research conducted on Change Islands by Smith et al. (2013), rationalization and the Enterprise Combination Policy were seen as something that frequently was not positive for the people there. In the "rationalization" brief produced by the Change Islands research (2012), the harvesters viewed rationalization as a tool to remove fisheries dependent communities (Local Knowledge Change Islands, Rationalization of the Fishing Industry). This policy was perceived as a way to remove fish harvesters from the waters and to reduce effort in the fishery. By doing so, it would then sever the economic support for the community that had been in place with the fishery. This in turn would lead to a collapse of the community. In Maine, island licencing is seen as a way to offset this shift

The licencing protocols in each region are ways of limiting access to the marine resource. This fits with Morison's (2004) discussion of input and output measures. Both Ostrom (1990) and Feeny et al. (1990) have discussed the challenge of limiting access to a common pool resource. Entry to the fishery itself is difficult; limiting those who have a

recreational permit has been demonstrated in each area as something that can be improved. Each permit does entail certain rights and responsibilities, but there are those who test those limits, and abuse the rights that they have been given. This is particularly clear in those who have been exploiting their catch from the recreational cod fishery in Newfoundland. While fisheries are by definition a common pool resource, the cod fishery clearly demonstrates the problems associated with ensuring access for both economic and recreational/food and subsistence purposes. Interviewees reported that this has led to problems for those who depended on the fishery for their living.

In both regions, harvesters and lobstermen spoke to the influence of being able to access a species to their respective fishing careers and identities. Access to licences with specific target species has been a problem in communities. This particular case is explored by Steneck et al. (2011) where they discuss the economic dependence on one species (lobster) for the majority of Maine communities. This was echoed in the interviews; very few, if any, community members targeted any species other than lobsters. Dependence on one species could be catastrophic in the future; the price crash in the summer of 2012 showed the danger of relying on one species, as do the current 2014 shrimp cuts in Newfoundland. Rather than diversify, the trend within the fishery has been to shift from dependency on one species to another. Single species licencing has helped to encourage this trend. This relates to the fears of resource exploitation from Hardin (1968) and common property theory.

Limits on Catch

In Newfoundland the harvesters suggest that the input controls, as Morison (2004) describes, that regulate quotas are the policy issues that impact them most. In Maine, it is the input measures as well; how many traps may lobstermen use to fish as a translation of how they are allowed to fish. Both of these input controls have similar impacts: they can make it either possible or impossible for people to continue living where they are. In Newfoundland the impact of fluctuating quotas is that harvesters cannot predict what their catch will be, translating into challenges with managing gear at the start of the season. Finances are a player in this ability to manage gear, particularly with mismatches that could occur between the gear at the beginning of the season and profits at the end of season based on fluctuating quotas.

It is particularly important to note the frustrations with the scientific surveys used to set the quotas. Fish harvesters interviewed said that these surveys use data that does not accurately depict what the health of the species currently is or where it moves. Repairing this relationship will require open communication between those who use the resource and those who manage it; in Newfoundland there is a large gap between the federal government and fisheries communities. In Maine, the number of traps fished can be prohibitive, and even used as a bargaining tool. Some lobstermen used so many traps before the trap limit that a deduction in traps was seen as a negative for them. On Monhegan they used their trap limit as a bargaining tool, once when setting borders, and again when entering the apprenticeship program that could bring more lobstermen to the island. In both regions these restrictions are seen as restrictive and a way that can disadvantage those who are trying to enter or remain in the fishery. However, people

from Swan's Island had conflicting views on trap limits. Some felt that more (and not less) traps could make it possible for them to make a better living. Since the site visit they have gotten a higher trap limit passed.

Co-management

The case study communities chosen demonstrate different examples of how co-management theory works in practice. Fisheries fit within the definition of a common property resource given by Feeny et al. (1990). While there have been instances of fisheries being overfished to the point of destruction, as per Hardin's theory (1968), fish harvesters and lobstermen in the communities examined within this study have taken notice of the impending degradation of their resource and worked collectively to maintain their resource, as discussed by Feeny et al. (1990). This demonstrates that they are able to self-limit their activities in the resource in order to allow the fishery to continue in the future and according to their own environmental values. While Monhegan and Swan's Island chose a similar strategy, for example, of creating a conservation zone with a limited number of traps, Monhegan took it one step further with the only closed season in the state for lobster. Both of these were pushed for by lobstermen. In a larger sense, the zone management in Maine is co-management in practice. Those who had become involved in it did so as they felt it would allow them to have a voice in the management process. In Newfoundland, the Anchor Point method of a delayed start to the area shrimp season shows how the people in the community were able to come together to change what they thought was a premature start to their season; they have had changes come from this and have had improvement in their quotas. On Fogo Island and Change Islands

this is seen in the proposed community cod trap and the cod pot experiments. There is a local market on Fogo Island due to the presence of the Fogo Island Inn, which serves local food as a part of the geotourism they are encouraging.

These examples of co-management in action demonstrate how it functions in practice and how it compares to the literature reviewed. Pinkerton and John (2008) asserted that co-management typically worked best on a local management scale. In these cases, the methods used were very local and included input from many community members. The methods discussed above follow their four stages in the development of legitimacy, particularly with the small conservation zones surrounding Monhegan and Swan's Island. These zones were ones that lobstermen from each island had thought of and lobbied the state government to allow it to be created. While zone regulations are enforced by the state, the island community and surrounding communities respect the zone rules, as in Pinkerton and John (2008). The zone management system in Maine is a larger scale model of co-management in practice.

Youth Entrance to Fisheries and Community Sustainability

One of the strongest themes from each region that came through was the ability of youth to enter the fishery, therefore allowing them to make a living in the community. This ability was one of the most important in continuing the future of both the fishery and the community. Without an ability to enter the fishery and adequate financial standing from the fishery, community members did have concerns about the ability of people to stay in the fishery, and thus in their communities. In community meetings attended on Chebeague and Monhegan, this was highlighted as necessary for the communities and

crucial to the future. The formation of the Chebeague Island Community Association (CICA) and Monhegan Island Sustainable Community Association (MISCA) are a testament to the activism of each community in sustaining their island in the future. Both of these efforts could expand the economic base of the communities, allowing the community to move away from full reliance upon fisheries, and hopefully attracting younger families to the community. This would keep multiple generations of people in the communities and would support the community. There has been a recent increase in housing built in Anchor Point, mainly due to the people returning from working elsewhere and continuing the long commute to work on site while maintaining a residence in the community. Through the problems outlined with licencing above, it can be difficult for communities to sustain enough fisheries-related employment to attract and keep residents. Expanded economic opportunities both locally and via commuting can enable community growth.

Regional Co-operation

Regional cooperation was seen in each community in different ways. In Maine this was partly done by the communities themselves. Chebeague worked with other island communities to become involved in the island licencing program. On Monhegan they have worked with other island communities to educate their children with the Outer Islands Teaching and Learning Collaborative. This is a collaboration of five island schools to team teach via teleconferencing units and create a sense of unity among island students. In Maine there was little cooperation between individual harbours in terms of fishing. Each harbour was competing for valuable fishing territory; these lines are

continually being tested by lobstermen from each harbour. However, there are times when they are able to work together. The example of Dropping Springs, although mainly limited to Chebeague Island residents and people with ties there, still includes a few other lobstermen from other harbours. Likewise, the same goes for the Swan's Island Co-op. People from other communities sell their catch there, including lobstermen from neighboring Long Island (Frenchboro). Co-operation between island communities is seen frequently in Maine. Both the Island Institute and the Maine Islands Coalition, among other types of co-operative organizations, have allowed island communities to work together to create initiatives like the island licencing system which has been implemented in Chebeague Island, Cliff Island, and the Cranberry Isles (Little Cranberry and Great Cranberry). This is also seen in school designations and the work that is carried out by the Maine Sea Coast Mission. By carrying out this work, students and community members from island communities are connected to one another and can create relationships prior to leaving the islands. This has connected people from island churches and for medical work. They are able to meet to discuss the possibilities of "aging in place" and the challenges of elder care on isolated islands. There are also relationships created between islands to compare how they work together.

Cooperation between the harvesters in the 4R region across the western coast of Newfoundland led to a fleet-wide delayed start to the shrimping season. The harvesters initially chose to delay the opening season of the fishery because they wanted to avoid catching shrimp while they were spawning in April. Since this delay was implemented, the 4R harvesters have seen their quotas rise, which they see as a reflection of their delayed start. This can also be seen in the recent discussions about rationalizing, or

amalgamating, the communities in that region to create one large town instead of many small ones. By doing this, they hope to create a system where they are able to pay for and afford more public and community services as a town. For Fogo Island and Change Islands there is both cooperation and competition. They have cooperated in their ability to use the processing plants (Fogo Island Co-op operates the plant), but there is also competition between the two islands. One community member pointed to Fogo Island as watching out for Fogo Island, and making sure that they are the ones who are able to continue. On Fogo Island the recent amalgamation of the communities into one town has shown an ability to work on a smaller regional scale, across the island. While this had already been demonstrated with the creation of the Co-operative, it shows that the Fogo Island community is willing to continue this type of communication for the good of the region instead of maintaining a singular status. The communities maintain their identities, but have an enhanced ability to provide services. Respondents from both regions mentioned the possibility of community administered quotas as a way to improve access to the fishery and to encourage regional cooperation; this echoes the findings of Foley et al. (2013).

Community Challenges and Reaction Strategies

Discussion in each region highlighted the tie of fisheries to the culture of the community. Post-cod moratorium, there was discussion of the culture of the community changing in Newfoundland. This has to do with commuting to work and how the harvesters there changed their fishing style to match the new target species and where they needed to go to catch said species. This type of change has led to a fear of losing

their cultural heritage of fishing and the old ways of fishing that had traditionally sustained the communities. In Maine, this was seen as integral to the identity of the community. Without fisheries, it was felt that they would lose their character. Fisheries are what brought people to the islands and kept them there; access is necessary to keep people there and for the communities to survive.

Each community has challenged policy decisions in the past, through lobbying efforts for example, and will likely continue to do so in the future. These challenges have been because they, as a community, felt that there needed to be a change to benefit both their community and their ability to fish. These challenges are also mechanisms for change. The co-operatives on Fogo Island and Swan's Island and the creation of Dropping Springs LLC and then Calendar Islands Lobster Company are all ways that communities have responded to changes in their fishery and strengthened their communities without officially changing policy or management. This method takes a situation and works with the community to strengthen their ability to respond to changes, particularly with relation to price and the sale of their target species. The delayed start by the 4R shrimp fleet has worked within the existing management structure to follow what they as harvesters felt was the best for their resource, with encouraging results. Monhegan and Swan's Island have changed the management for their specific islands and their zones, making it possible for their communities to continue to have specific access in their area. This type of work has helped their communities. They are able to keep their access to the fishery despite increased pressure from surrounding communities; it is this access to the fishery that makes it possible for them to maintain their livelihoods. As someone from Monhegan had said, it was necessary to have the income from fishing to

continue living there ("really one person in the family has to have that inflated income [from fishing] to live out here because it's so expensive"). Increased pressure from other zones and harbours means that with a defined zone, they are able to maintain their access to the resource and their traditional fishing territory.

Islands and Islandness

This research demonstrates how being on an island has impacted the communities and their relationship with fisheries. Frequently members of each community discussed problems such as access to major economic and service centres and how that relative distance was a challenge for them. This was shared among communities, regardless of the distance from major centres or how they accessed them. While water could be seen as a barrier, as in Péron and Baldacchino, it was also what gave each community the ability to make a living and stay in their communities. In that sense, each community was a part of an aquapelago, per Hayward's definition. Water is a connection for them between the regions that they work in and the way that they define their community. Fisheries need water; the case study communities chosen need fisheries. This reliance was necessary for the communities and for their definition of themselves. Fisheries were integral to the community identity, as was their place on an island. Each community felt that it was a unique and special place, but there were overlapping intrinsic qualities that were similar for each community chosen. These qualities had to do with how respondents in each community felt about their island community; creating a place in each region. This relates to how Hay sees islands and human created place connecting to each other.

Overall Comparison of Case Study Regions

At the root, this research is a comparison of a subset of island communities in differing jurisdictions. It is also a juxtaposition of policy and management systems in the United States and Canada. There are several different levels of governance that were seen in this work. They range from local (community fishing territory) through to federal levels. These layered and interlocking governance structures all have the ability to impact whether or not fishing communities are able to continue to exist. A brief discussion of the evidence of this from the case study communities provided follows.

In Newfoundland, fisheries have been managed at an almost exclusively federal level, particularly within the issues that were discussed in this research. Processing plants are managed at a provincial level. Municipal governments have provided support for harvester-initiated activities; this is particularly seen in the Anchor Point town council's support of the voluntary delayed start for the 4R shrimp fleet (2012). In the 1960s, there was a provincial push in Newfoundland to bring rural communities away from their homes and into larger concentrated service centers. This is what eventually led to the creation of the Fogo Island Co-operative, an organization that is still influencing the Fogo Island and Change Islands communities today. Respondents felt that the government was not actively helping their communities: "To support this island…costs an awful lot of money. And the province says…by giving licences down in other places near the resources and so on, because we're hoping Fogo is gonna be choked out eventually." This demonstrates the community's dependence on fishery related activities; if other areas are able to obtain access to resources that Fogo Island relies upon, they may lose some of their economic foothold on that resource. This also speaks to the current feeling about the

province's stance on islands and rural communities; they feel island and rural communities are not valued.

In contrast, Maine's fisheries are managed at both a state and federal level. The federal level management is done in federal waters, by region. The state management is within the state waters and includes the zone management system. Within each zone, there is the community level of fishing territories, particularly with the cases of Monhegan and Swan's Island and community fishing territory. Respondents from Maine did feel that there was recognition by the state of the importance of their island communities. Despite this recognition, in Maine there was apprehension about the price of lobster and the ability to maintain a steady population on the islands. This was also tied on each island to the sustainability of the school and the number of people that have young families. Housing has traditionally been an issue on islands.

These differences do mean that there are ways that management and policy decisions will be different; however, this research finds that there are more similarities than not in how fishing communities have responded to challenges in their community. In both Newfoundland and Maine, for example, co-operatives have been formed that have impacted island communities. Communities have also lobbied senior governments for policy change. Resiliency strategies, both those that already exist and those that were hoped for in the future are similar, particularly with the example of Calendar Islands Lobster Company and discussion in each community of creating value-added products. Distance and the time required to access major economic and service centers were problems in each area that have been addressed through expanded commuting to work, as is done in Newfoundland, or with support for home-based businesses and expanded

entrepreneurial opportunities. While these were the focus of this research, this does not mean they are the only points of comparison. Future research could expand upon these similarities and differences.

Implications and Future Work

There were challenges with doing this work. There were limits to the number of people that could be interviewed while in the field, both due to time restrictions and the snowball method. A limitation of the snowball method is community perception of who is involved in governance and policy decisions; this led to a narrow range of ages for respondents. Individuals interviewed were those noted by community members as people involved in policy decisions. For the most part, this meant they were in the 45-65 age range, with a few outliers of older and younger participants. Most of the people in the communities who have a history of activism have done so for a long period of time; they have a long memory of their involvement and can track multiple changes. I was able to gain a timeline of changes in the fishery from those people; I was able to get some of the other perspectives from people in their 30s, but that was the youngest group of people that I interviewed. There were others on the islands and in the communities, certainly, but not all of them were interested in becoming full-time harvesters or lobstermen. There are younger people who have started to become involved and are coming up through the ranks. People who have been active in fisheries are also more comfortable speaking to people in public. I would have liked to interview more people while I was in the field and would have liked to spend more time in each community, especially in Maine, but the realities of time available for a Master's thesis project set in. While I was able to capture

the perspectives of communities leaders within the fishery in these areas, future research could include longer stays in each community and development of contacts in different segments of these communities (such as youth) or in surrounding areas as well.

Despite the many challenges that these communities face, (schooling, housing, transportation or resource, and market access to provide a few examples), there were many expressions and aspirations of hope for the future in each region. While fisheries licencing may be restrictive and challenging, there was keen anticipation that the outlined changes, both already in practice and those that were possible in the future, would increase the number of people on the Maine islands. There was still some fear for the fishery, especially in terms of a disappearing focus on the historical importance of small scale fisheries in Newfoundland, but the communities still felt that they may be able to make a difference in the future for their communities. They emphasized that small scale fisheries are important for the future. There were people in Maine who felt the same fear of the loss of fisheries and a change of how important they as small fishing communities had become. The increased dependency on the lobster fishery in Maine and shrimp and crab in Newfoundland was also recognized by the people living in the regions.

Next steps for work in Newfoundland could include facilitating more conversations between people in Anchor Point area about the creation of a co-operative. For Fogo Island and Change Islands this could include ways to bring together different stakeholders to discuss the potential for a community cod trap or continued work to develop new markets. A long-term study on the role of the late start shrimp fishery on the northern peninsula could track landings and how landings have changed. While the role of the changing climate of the ocean was not explored in this research, it is also

something that does need to be explored in the future. As the climate changes, the species that are available for each community will likely shift and change according to the species ranges. This research is already starting to happen and will likely grow in importance as changes increase. These will be related to catch rates in the future and how future quotas are determined.

Next steps in Maine could focus on specific resiliency patterns in response to changes in the fishery. The creation of the Dropping Springs LLC and Calendar Islands Lobster Company could become an entire research project devoted to the role of co-operation between communities and rebranding lobster and marketing it by lobstermen. A follow-up project about the role of the island limited entry program could detail how the islands that implemented the system have been impacted versus those that did not. Additionally, with the change in trap limits for both Swan's Island and Monhegan, it will be important to see how that has impacted not only the community, but also how the lobstermen are fishing on those islands in relation to other islands. One lobsterman who fished in those waters suggested likely changes to how many people are allowed to fish in the Swan's Island zone, for example, leading to there being a larger number of people fishing in that zone who may not have done so previously.

Conclusions

This research shows that there is a complex relationship between fisheries policy, fisheries management, and island community development. Although there are points of comparison, it is important to note that there are differences between the two regions that make it difficult to explore each case study as an exact replica of the policy and

management structure that exists in each region. This thesis focused on one small and specific subset of island communities in the United States and Canada; this focus could be expanded in the future to further demonstrate how island fishing communities are related to and interact with resource management and policy decisions in these and other locales. Despite their differences, the strategies used by these island communities to react to the challenges set forth by policy and management structures are comparable. The two issues that were focused upon in this thesis, methods of limiting catch and, in particular, licencing practices, were identified by residents as the policies that had made the most difference to their communities. These issues provided the clearest points of comparison. So while there are differences, the ways that these policies and regulations have affected harvesters and fishermen are similar. Licencing tended to create barriers to people entering the fishery, with implications for the communities in each region. Likewise with other ways in which the catch is limited in both regions; there are differences in how it is accomplished, but the end result is similar despite the overall value placed on island communities. Fisheries are what have allowed each community to grow and flourish in the past; island communities feel that fisheries are integral to their future as well.

Co-management themes were threaded throughout this work. My research contributed to several different aspects of the co-management theory set out in the beginning of this thesis. Co-management creates a bridge that allows harvesters, lobstermen, and government agencies to collectively decide on a management practice rather than one or the other deciding alone. This type of cooperation allows for incorporation of local knowledge into the policy framework and management process; the examples discussed in this thesis illustrate how local knowledge can be successfully

used in fisheries management without contributing to Hardin's collapse of the resource. The literature suggests that successful co-management allows for more ownership over the resource, heightening the connection that already exists between island communities and the water that has been so socially and culturally important to them, relating to Hayward's theory on aquapelagos (2012). The findings of this research support the proposition that stronger ownership and investment in fisheries allows communities to strengthen their economies, thus strengthening their community and place.

My first research question focused on what kind of relationship existed between island community development, fisheries policy, and fisheries management. In Newfoundland this relationship exists primarily through a top-down structure. Policy and management decisions are written by and enforced by Fisheries and Oceans Canada, on a federal level. There are very few places and ways for community members to become officially involved in the existing policy and management system. The same goes for the scientific surveys on cod; the Sentinel Fishery was designed by government scientists and, from the harvesters perspective, do not incorporate their local knowledge into the survey design, despite their involvement in conducting the survey. This has led to distrust of the information received from surveys. However, there were decisions made by the government that were seen in a positive light by both the community and the federal government. One example of this is the Enterprise Combining Policy and how it has now allowed harvesters more control over the ways in which they have access to the resource. In Maine the relationship is more integrated. Lobstermen do have a modicum of control over the management process because of the zone management system and resulting zone councils. This system has had unintended consequences, such as the implementation of

the 49%/51% rule for setting traps, thus changing where lobstermen fished. The relationship between island community development, fisheries policy, and fisheries management truly depends on both the country and the community. My research uses specific case studies from each region; despite the noted similarities each community's members had their own perspective on policy, management and implications for community development.

My second research question focused on how communities responded to changes in the fishery. There were two main ways that communities responded to changes: 1) to work within the existing management and policy structure to make changes to benefit the community; and 2) to change how their catch was being bought, processed, and marketed. The voluntary late start for the 4R harvesters and Monhegan and Swan's Island's respective conservation zones are examples of how each community worked within the existing structure to tailor it to their needs and how they felt the fishery could be most successful. This incorporates their local knowledge of the fishery into the system. The Fogo Island Co-operative, Swan's Island Fishermen's Co-operative, and Dropping Springs LLC (later resulting in the Calendar Islands Lobster Company) are all examples of island communities working together to change how their catch is bought, processed, and marketed. Furthermore, the Chebeague Island Community Association and the Monhegan Island Sustainable Community Association are examples of community-driven and founded groups that work to ensure both housing and development of expanded economic opportunities on each island. Fogo Island's Shorefast Foundation is an example of a place-based non-profit that has worked to expand the

economic opportunities on the island by creating geo-tourism and artist's retreats on the island.

Third, I answer my third research question: how each community's location on an island influenced the ability of each community to respond to changes. Each region felt differently about whether or not being on an island had impacted them differently than being on the mainland would have. In Anchor Point, there was more conversation about distance and the time required for transportation to and from major service centers than that of being on an island. This could be due to Anchor Point being a community on a much larger island, Newfoundland, than being a smaller island. Newfoundland itself is a fairly remote island, with access to the island limited to ferries and planes. The majority of the population of in Newfoundland is based on the Avalon Peninsula surrounding St. John's; they have a very different sense of life on an island than residents of Anchor Point, Fogo Island, and Change Islands have. On Fogo Island and Change Islands they felt that being on an island had definitely impacted them due to the lack of other options available to them due to their distance from economically significant centers on the mainland. In both of these cases, they did say that their location was important due to their proximity to the fisheries resource. The population of Maine is primarily on the mainland, with the largest population centre in the southernmost portion of the state. Very few of the residents of Maine live on the populated unbridged islands. In Maine there was both a sense of being impacted because they lived on their specific island and a sense of not being different compared to other islands in Maine. This was not seen on every island. There were certain location-specific issues for each community. On Monhegan there was the cost of energy and their distance from the mainland.

Respondents on Monhegan specifically pointed to their conservation zone and closed as unique in relation to the rest of the state of Maine. For Chebeague the concerns were the opposite; how close they were to the mainland and crowding of fishing territory in their community's home zone. Respondents there pointed to their being different from the mainland and with fewer markets than the mainland. On Swan's Island there was the proximity to zone C, creating crowding in the fishing territory. In terms of being on an island, there were the challenges of operating within the ferry schedule and getting access to services on the mainland. The feeling of an island, from this research, is tied to the size of the island and the distance from, plus the limited means of transportation available to, access to services.

The most important theme identified in this research is the resiliency of the communities, through finding ways to adapt to different challenges that have come from their primary economic support mechanism, fisheries. There are many different changes and challenges that each community has faced, but each community has found a way to work to mitigate those changes and to keep their community functioning. While there are concerns about the future, and by no means will there cease to be challenges in the fishery, each community has kept itself going by facing past challenges, in part by changing either how they were approaching the fishery management system and/or how they marketed and processed their respective catches. This connection to geography and sense of place and how communities are affected shows how important location is to each community. While each community has had different policy and management decisions and a different relationship to these decisions and their respective decision-makers, their responses are similar. Likewise, while a policy or management decision can be the same,

the reaction and response can be different for each community. The connection each community shares with their island is an important one, one that has in their words influenced their desire to remain in their place. The island communities visited in this research are dependent on fisheries, thus they work in and with the fisheries management processes to maintain a continued presence on their islands.

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Appendix A—Research Questions

Interview Questions

What term do you prefer to be called when referring to your occupation? (e.g., fisherman, fisher, fish harvester, etc.)

How long have you been involved in fisheries? If you have a licence, how long did it take you to get it and how did you get it (purchased, lottery, apprentice, etc.)?

Why did you want to get involved in fisheries?

What fishery was the one that traditionally was done here? Are there any other forms of fishery that are done from this community at this point?

Is there one species that is most important today?

What do you think would be necessary in order for fishermen to want to fish other species in the area? Do you think there would be interest in creating a niche for other fisheries (groundfish, shrimp, herring, etc)? Do you think this could be a viable option for the people of your community to fish additional species?

Do you think that where you live (your location/the location of your community) has impacted how policies affect your community? Do you think that being on the mainland (or another island) would change how policies have affected you?

Do you think distance is a factor that has affected how your community is able to deal with changes in the fishery (from large centers, from processing, from the mainland, etc)?

How has your community changed in recent years with relation to fisheries (particularly the Maine communities that have conservation zones surrounding them)?

Do you think the culture of the community has changed at all?

What policies and/or regulations have impacted you/your community the most? Why? How?

Did you take part in the creation of any of these policies or regulations? If so, how were you involved? What role did your community play? Why?

Has your community changed management locally? If so, how? Do you feel that it has changed things on a state/provincial level or at a federal level?

Where do you sell your catch? How many options do you have?

Is there anything additional to the questions asked that you feel could be (a) key factor(s) that I did not cover in this interview?

Who else in this community has a stake in the fishery? Is there anyone else you would recommend I speak to?

Is there anything else you think is important for me to know in the context of your community and fisheries?

NL COMMUNITIES
How did the 1992 moratorium affect you/your community?

Have you or your community tried any different techniques to cope with those changes? If so, what?

Do you work regionally on issues related the fishery (i.e. with other nearby communities)? If yes, how do you work together? Has this kind of regional collaboration increased or decreased in recent years? What are some of the factors that have led to this change?

FOGO ISLAND/CHANGE ISLANDS
Has the existence of the Co-op influenced how the communities of Fogo Island have been impacted by fisheries policy? (and for Change Islands of the locally owned fish plant) If yes, how? If no, why not? Please explain.

Has the existence of the Co-op influenced how the communities of Fogo Island have responded to changes in fisheries policy? If yes, how? If no, why not? Please explain.

What cod pot experiments have you been a part of? How did they work? How do you feel that the presence of a community cod pot experiment affected the community? How was this idea received?

How do you feel that the presence of a community cod trap would affected the community? How would you like to see this idea proceed in the future? How has this idea been received by policy-makers?

Could you think of an alternative community-based method of fishing that might give better results?

ANCHOR POINT
Why do you feel that the regulations surrounding the shrimp fishery need to be changed? Do they need to be changed?

Have you ever fished for anything other than shrimp?

Do you feel that current policy will allow the fishery to sustainably continue in the future? How do you think that this could happen?

Did you participate in the voluntary late start for the shrimp season? Why or why not? Do you think that the practice of a voluntary late start could impact what happens in the future with the sustainability of the fishery or with fisheries policy? Do you think that this kind of action could be a viable strategy for other regions?

How do you think the presence of a fishery co-operative would impact your community? What is the ideal structure for a co-operative in the area and how would you like to see it work (if you would like to see a co-op formed)? What activities would you like to see covered by the co-op (i.e., fuel and/or supplies purchasing, buying and marketing your catch, other)?

MAINE COMMUNITIES

How do you feel that having a specified island licencing system would have impacted your community?

How could a changed system help islands to recover or maintain their island populations?

Will it help islands to maintain their "islandness" if fishing communities are maintained? Do you see fishing as an integral part of your island and its identity?

Do you think that your island fishing community was impacted differently than a mainland community was this past summer with the fluctuations in price? How do you think that the impacts from those changes could be lessened in the future?

SWAN'S ISLAND

Do you fish in the conservation zone? Why or why not?

Were you a part of the creation of the conservation zone?

How do you feel the creation of the conservation zone has impacted the community on Swan's?

MONHEGAN

How long did it take you to get a licence under the Monhegan apprenticeship program? How did you get your licence?

How do you think the changes to the apprenticeship program passed this past spring will impact your community?

Do you think that the system Monhegan uses could be done elsewhere? What facets of this system make it work here?

CHEBEAGUE ISLAND

Is your community more dependent on fisheries since you seceded from Cumberland?

How do you think the limited lobster licence entry program will impact your community? Will it make it possible for people to stay on the islands longer?

POLICY MAKERS, GOVERNMENT AND TOWN OFFICIALS, NON-PROFITS

What agency do you represent?

What fisheries policies have you (or your organization) played a role in? Why?

What policies or management changes in the fishery have you seen that you view to be the most effective?

What policies do you think impact island communities the most? Why?

Appendix B—Information Letter and Consent Forms for Respondents

Information Letter and Consent Form

Fisheries Policy and Island Community Development: Case Studies from Maine and Newfoundland

Purpose of the Study

You are invited to participate in research that seeks to see how fisheries policy impacts island community development in Maine and Newfoundland. Case study communities were selected because they were active players in policy and management for fisheries in their respective regions. Emily Thomas, the researcher, hopes to show that fisheries policy can have strong impacts on communities. Likewise, she is also hoping to show the impacts that communities can have on policy and management discussions. It is being completed as the thesis requirement in the Master of the Arts (Island Studies) program at the University of Prince Edward Island.

Study Design

This study is focused around interviews in the communities. Emily Thomas will be staying in the communities she selected as case studies and conducting interviews on-site in those communities. If there are any questions that you do not want to answer, you are free to not answer them. You are also free to withdraw your interview at any time with no repercussions.

Who Can Participate in the Study

You may participate in this study if you are 18 years of age or older and have a well-established dependence upon fisheries and/or community development. This may include, but is not limited to, fishers, crew on board fishing vessels, Co-op managers, town employees, processing plant managers, and spouses of fishers. Your participation is voluntary. There will be between 15-25 participants per community.

Who Will be Conducting the Research

The Principal Investigator for this project is Emily Thomas. She is a Master's candidate at the University of Prince Edward Island. Co-Investigators are Dr. Ratana Chuenpagdee (Memorial University of Newfoundland), Dr. Maureen Woodrow (University of Ottawa), and Dr. Kelly Vodden (Memorial University of Newfoundland). Co-supervisors for the Master's thesis are Dr. Michael Van Den Heuvel (University of Prince Edward Island) and Dr. Kelly Vodden (Memorial University of Newfoundland). As a participant, your main contact will be with the Principal Investigator, Emily.

What You Will be Asked to Do

You will be asked to answer a series of questions with the Principal Investigator, Emily. These questions are about fisheries policy and community development in your community and region. They will be held in your community or at your workplace. It will take between one hour and one and a half hours to complete the interview.

Possible Risks and Discomforts

Minimal risk is involved with this study. The repercussions from this study could include social risks and loss of anonymity, due to the small size of the community.

Possible Benefits

There are no anticipated direct personal benefits from participating in this research.

Compensation

You will not be compensated for participating in this study. There are no costs to you associated with being involved in this study.

Confidentiality and Anonymity

You will not be identified by name in any publication that comes from this research. You will be identified by either a code name or number. The audio-recording of your interview will be destroyed as soon as transcripts have been recorded. These transcripts will be stored on a password protected computer. Only the PI, Emily Thomas, and her co-investigators and co-supervisors will have access to this information. This information will be stored for 5 years, as required by the University of Prince Edward Island Policy on Research Integrity. The files will be securely stored until then and will be destroyed at that time.

Questions

If you have any questions, please feel free to contact Emily Thomas at the following numbers: (207)-460-1686 (Maine) or (902)-213-1015 (Prince Edward Island). Alternately, please use her e-mail address: ebthomas@upei.ca. If any new information about this study becomes available, she will contact you.

Summary

You will receive a copy of this information sheet and the consent form for your records and information at the beginning of the study. At the end of the study, you will receive a short document that gives the results from all of the case study community interviews. In addition, you will receive a copy of the transcript from your interview if you want one.

Problems or Concerns

I understand that I can contact the UPEI Research Ethics Board at (902)-620-5104, or by e-mail at lynmacdonald@upei.ca if I have any concerns about the ethical conduct of this study.

Consent Form

Fisheries Policy and Island Community Development: Case Studies from Maine and Newfoundland

Please initial the line under the statement to indicate that you, the participant in this focus group, agree with the statement:

I agree to allow my responses from this focus group be recorded with an electronic recording device.

_____

I agree to be contacted for follow up questions in the future.

_____

I agree to let substantial quotations from my participation in this focus group be used in the published works resulting from this focus group.

_____

I agree to let personal information about myself be shared with the co-investigating team on this project.

_____

I understand that I can keep a copy of the signed and dated consent form.

_____

I understand that I have the freedom withdraw at any time and/or not answer a question.

_____

I understand that the information will be kept confidential within the limits of the law.

_____

I have read the explanation about this study. I have been given the opportunity to discuss it and my questions have been answered to my satisfaction. I hereby consent to take part in this study. However, I realize that my participation is voluntary and that I am free to withdraw from this study at any time.

Your signature: _____
Date: _____

Principal investigator's signature: _____
Date: _____

This research is being conducted by Emily Thomas for her graduate thesis, *Fisheries Policy and Island Community Development: Case Studies from Maine and Newfoundland*, under the supervision of Dr. Michael Van Den Heuvel and Dr. Kelly Vodden. Any questions or concerns about this study can be directed to Emily Thomas OR Dr. Michael Van Den Heuvel, (902)-566-6072, mheuvel@upei.ca, OR Dr. Kelly Vodden, (709)-746-8607, kvodden@mun.ca.

This research has been approved by the UPEI Research Ethics Board. Any concerns regarding your involvement in this study may be directed to **the Chair of the Research Ethics Board**, at reb@upei.ca.

Consent Form

Fisheries Policy and Island Community Development: Case Studies from Maine and Newfoundland

Please initial the line under the statement to indicate that you, the participant, agree with the statement:

I agree to my interview being recorded with an electronic recording device.
_____

I agree to be contacted for follow up questions in the future.
_____

I agree to let substantial quotations from my interview be used in the published works resulting from this interview.
_____

I agree to let personal information about myself be shared with the co-investigating team on this project.
_____

I understand that I can keep a copy of the signed and dated consent form.
_____

I understand that I have the freedom withdraw at any time and/or not answer a question.
_____

I understand that the information will be kept confidential within the limits of the law.
_____

I have read the explanation about this study. I have been given the opportunity to discuss it and my questions have been answered to my satisfaction. I hereby consent to take part in this study. However, I realize that my participation is voluntary and that I am free to withdraw from this study at any time.

Your signature: _____
Date: _____

Principal investigator's signature: _____
Date: _____

This research is being conducted by Emily Thomas for her graduate thesis, *Fisheries Policy and Island Community Development: Case Studies from Maine and Newfoundland*, under the supervision of Dr. Michael Van Den Heuvel and Dr. Kelly Vodden. Any questions or concerns about this study can be directed to Emily Thomas OR Dr. Michael Van Den Heuvel, (902)-566-6072, mheuvel@upei.ca, OR Dr. Kelly Vodden, (709)-746-8607, kvodden@mun.ca.

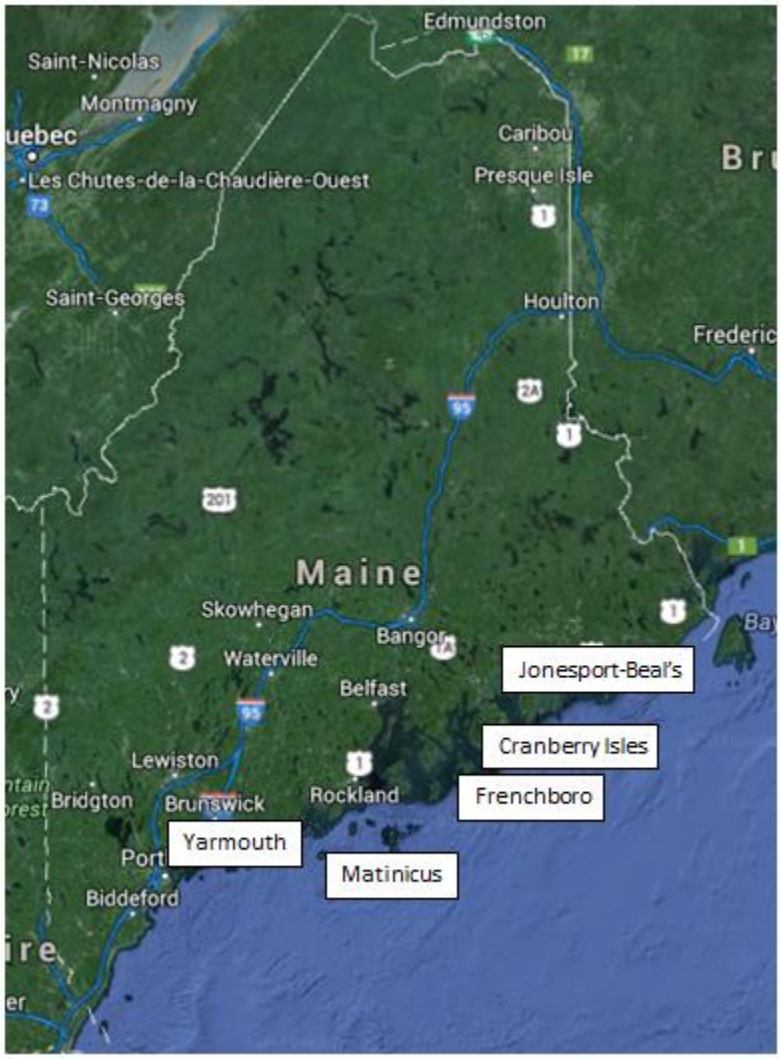
This research has been approved by the UPEI Research Ethics Board. Any concerns regarding your involvement in this study may be directed to **the Chair of the Research Ethics Board**, at reb@upei.ca.

Appendix C—Debriefing Script

Debriefing Script

First of all, thank you so much for participating in my research and being willing to be interviewed. My hope for this research is that I will be able to see the connection between fisheries policy and island community development. I will be interviewing a range of people, from fishers to policy makers, to see how policies have been created and the impacts that they have had on communities. Do you have any questions that came up during our conversation? If you have any questions in the future, please feel free to call or e-mail me.

Appendix D—Map of Other Maine Communities



Source: Google Maps (2014k). Additional community names provided by author.

Appendix E—Map of Other Newfoundland Communities

Source: Google Maps. (2014g). Additional community names provided by the author.

Source: Google Maps. (2014h). Additional community names provided by the author.